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Geoscience Student Enrollment Survey

1987-1988

United States and Canada

Marilyn J. Suiter
Administrator, Special Programs

Nicholas H. Claudy
Director of Development

American Geological Institute

Marvin E. Kauffman
Executive Director

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Foreword

History

The American Geological Institute's surveys of student enrollments in geoscience began in 1956. For the first few years the surveys gathered data on U.S. and Canadian geology and geophysics enrollments only, and tracked only undergraduate majors (juniors and seniors) and advanced degree candidates. By 1961 the survey had expanded to include freshmen and sophomores as well as those receiving degrees (bachelor's, master's, and doctoral).

From 1972 to 1983 the survey program was under contract to the U.S. Geological Survey. During those 12 years the enrollment categories were expanded to 13 subdisciplines of geoscience. In addition, data were collected on female and minority enrollments and degrees granted.

From 1984 to 1987 AGI continued to gather student-enrollment and degrees-granted information. Minority data, however, were not monitored.

Throughout those years, as now, the imbalance in supply of and demand for human resources in the geosciences has been a problem for academic planners and employers alike. The AGI *Geoscience Student Enrollment Survey* has been redesigned to address planners' needs for accurate, current information on the size of the pool of potential employees (current graduates) and the distribution of future geoscientists in the "pipeline."

Furthermore, the changing demographics of American society and concern about technological excellence have focused national attention on academic enrollment and degree attainment, particularly in the sciences, as they affect the quantity and quality of the North American labor pool. Decreases in the number of matriculants toward geoscience degrees have been of special concern to the profession.

One possible solution for declining enrollment is to increase the numbers from those populations that are currently underrepresented in geoscience (i.e., women, certain ethnic minorities, and individuals with handicaps/disabilities) who are trained for careers in geoscience research, industry, and education. The AGI *Geoscience Student Enrollment Survey* provides data that track enrollment and degrees attained by students of currently underrepresented populations – an important element in developing effective recruitment and retention programs.

Future Surveys

AGI plans to continue its annual monitoring of the student population in geoscience, including the survey of ethnic minority and handicapped/disabled groups.

Other AGI surveys that address human resources include the *North American Survey of Geoscientists*, which describes demographic characteristics for the professional population, and the annual *Geoscientific Employment and Hiring Survey*, which updates current employment levels and hiring projections for six major categories of geoscientific employment: oil and gas industry, mining/minerals industry, federal/state government agencies, research institutions/DOE-funded national laboratories, geoscientific consulting firms, and academia.

Acknowledgements

The American Geological Institute gratefully acknowledges the generous funding from Amoco Production Company, Mobil Exploration and Producing U.S., Shell Oil Company, and the U. S. Geological Survey (Grant #14-08-001-G1618). We also appreciate the cooperation of the geoscientists who provided information and the support of the AGI Human Resources Advisory Committee in this project.

Introduction

The data in this report identify current enrollments and degrees awarded in geoscience at the undergraduate and graduate levels for the 1987-88 academic year. The survey was sent to all degree-granting geoscience departments that appear in the AGI *Directory of Geoscience Departments* (i.e., all geoscience departments in the United States and Canada that had been identified by AGI at the time of the survey). The number of departments surveyed in 1988 was 886. The U.S. response rate was approximately 71%, a rate similar to that of previous years. The Canadian response rate was 76%. The response rate for U.S. ethnic minority information was 68%. Canadian institutions were not surveyed on ethnic minorities. A new element of this edition of the survey was a census of students with handicaps or disabilities.

The survey is sent to geoscience departments only. That category may exclude some other departments that also address subdisciplines included in this report, such as soil sciences.

The assessment of enrollments and degrees awarded in geoscience include a variety of descriptive elements that define the population:

- geoscientific subdiscipline (geology, geophysics, oceanography/marine science, geological engineering, geophysical engineering, geochemistry, hydrology, mineralogy, paleontology, soil science, environmental science, earth-science teaching, and general earth science),
- levels of study (freshman/sophomore, junior, senior, master's candidate, and doctoral candidate),
- degrees awarded (BA/BS, MA/MS, and PhD),
- gender, and
- ethnic group (Black, Hispanic, Native American, and Asian-American).

The survey assesses North American students only. Respondents were requested to exclude foreign nationals from the data reported.

Symbols used in the text and figures are:

- F/S = freshman/sophomore,
- J = junior,
- S = senior,
- MA/MS = Master of Arts degree/Master of Science degree,
- PhD = Doctor of Philosophy degree,
- UG = undergraduate, and
- GR = graduate.

Dates given refer to an academic year; September, 1987, through June, 1988, is expressed here as 1987-88. If only one year is given, it is the year ending the academic period (1988 in the example above).

Numerical information is given to one significant figure. "Rounding" is done in the conventional manner. Also, if the first insignificant number is five, the preceding number is increased if it is odd, unchanged if it is even. For example, the numbers 2.55 and 2.65 both round to 2.6.

Survey Results – U.S. Data

Enrollment

The 1987-88 undergraduate enrollment in geoscience (14,898) is 1.9% less than that of 1986-87 (15,179). Enrollment at the undergraduate level increased steadily from 1977-78 (25,399) to 1982-83 (36,893), then declined erratically to the current low in 1987-88. The decrease in the decline from 1986-87 to 1987-88 may be the precursor to a reversal in the enrollment trend. (See Fig. 1a, 1b and Table I.)

Enrollment at the graduate level in 1987-88 (9,111) is 5.6% less than that of 1986-87 (9,650). Graduate geoscience enrollment remained fairly level during the past ten years with a variation of only 2,580 students, as compared to the undergraduate variation of about 22,000 students (see Fig. 1b). It is interesting to note that the low point in graduate enrollment in that period, 8,843 in 1977-78, is 3.0% less than the 1987-88 graduate enrollment. (See Fig. 1c and Appendix I.)

Total 1987-88 enrollment (24,009) is 3.3% less than enrollment in 1986-87 (24,829).

Figure 1a

Distribution of Enrollment by Level (U.S.)
1978 - 1988

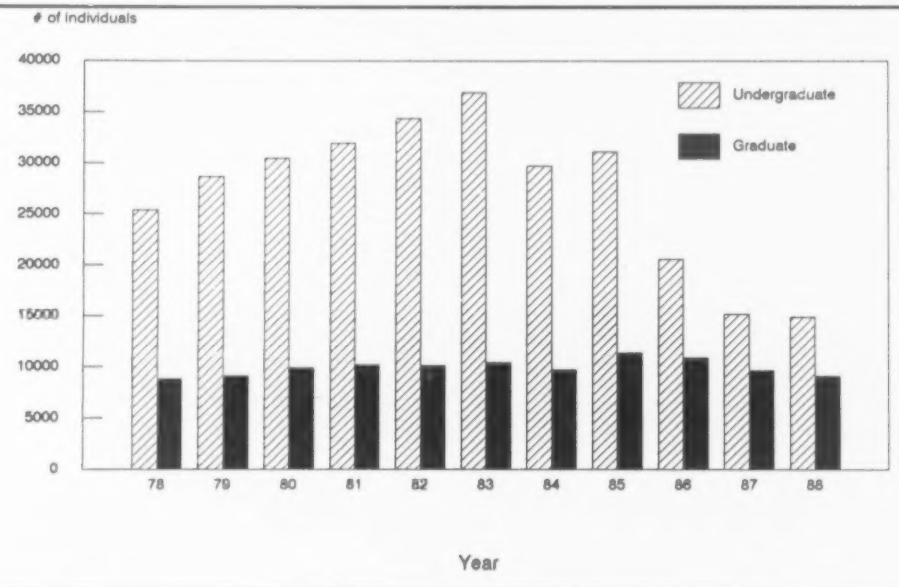
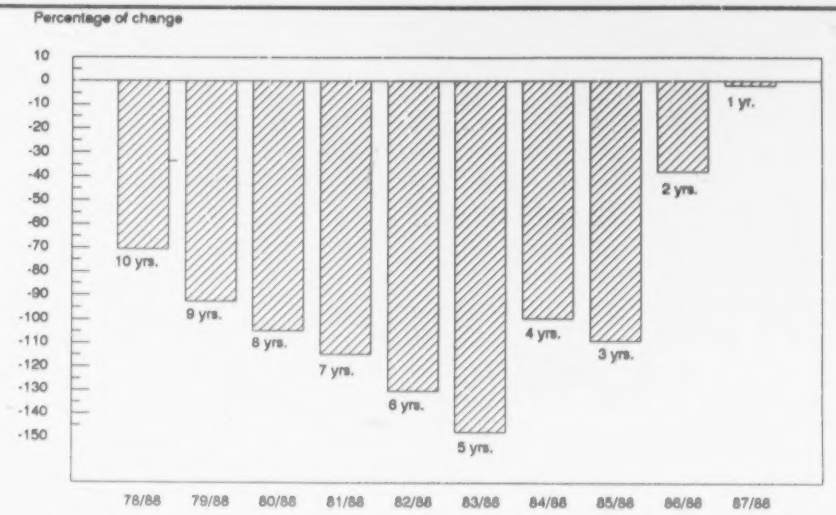


Figure 1b

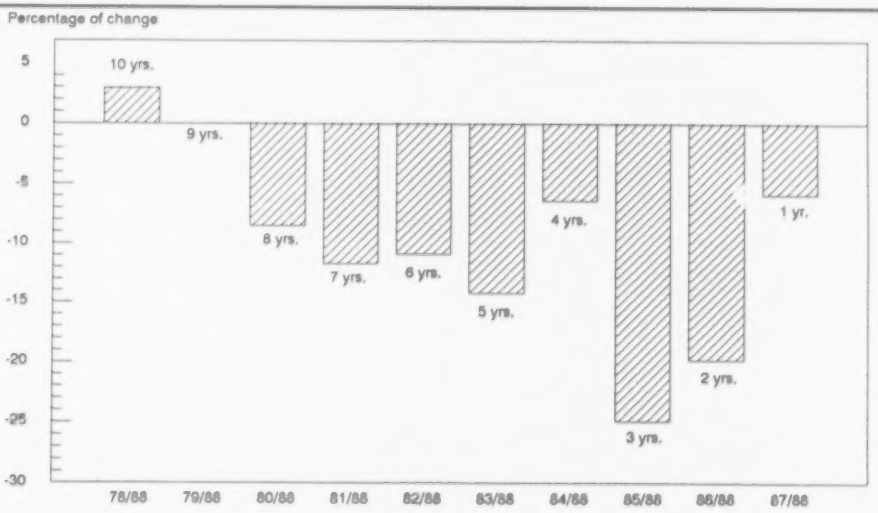
Change in Undergraduate Enrollment (U.S.)
1978-1988



Note: Percentage of change is relative to 1987-88 undergraduate enrollment (14,898).

Figure 1c

Change in Graduate Enrollment (U.S.)
1978-1988



Note: Percentage of change is relative to 1987-88 graduate enrollment (9,111).

Table I

U.S. Enrollment 1978-1988

Enrollments	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Undergraduate	25,399	28,674	30,495	31,987	34,343	36,893	29,722	31,149	20,584	15,179	14,898
Graduate	8,843	9,112	9,881	10,180	10,108	10,408	9,695	11,381	10,917	9,650	9,111
Total	**34,242**	**37,786**	**40,376**	**42,167**	**44,451**	**47,301**	**39,417**	**45,530**	**31,501**	**24,829**	**24,009**

The distribution of 1987-88 enrollment by level is shown in Table II (see Fig. 2a). Geoscience student enrollment increased significantly at the freshman/sophomore level in 1987-88 (40.8%) as compared to 1986-87 (see Fig. 2b). All other class levels show decreased enrollment in 1987-88: juniors, -14.2%, seniors, -24.0%, master's candidates, -7.3%, and doctoral candidates, -2.4 %. (See Fig. 2b and Table II).

The enrollment of women increased dramatically as well.Women represent 29.3% of the total enrollment in 1987-88, as compared to 27.5% in 1986-87. In 1987-88, women comprise 31.9% of the BA/BS candidates: 37.2% of the freshmen/sophomores, 30.6% of the juniors, and 25.9% of the seniors. At the graduate level, women comprise 26.4% of the MA/MS candidates, and 22.9% of the PhD candidates. (See Fig. 2a.)

Figure 2a

Distribution of Enrollment (U.S.)
1988

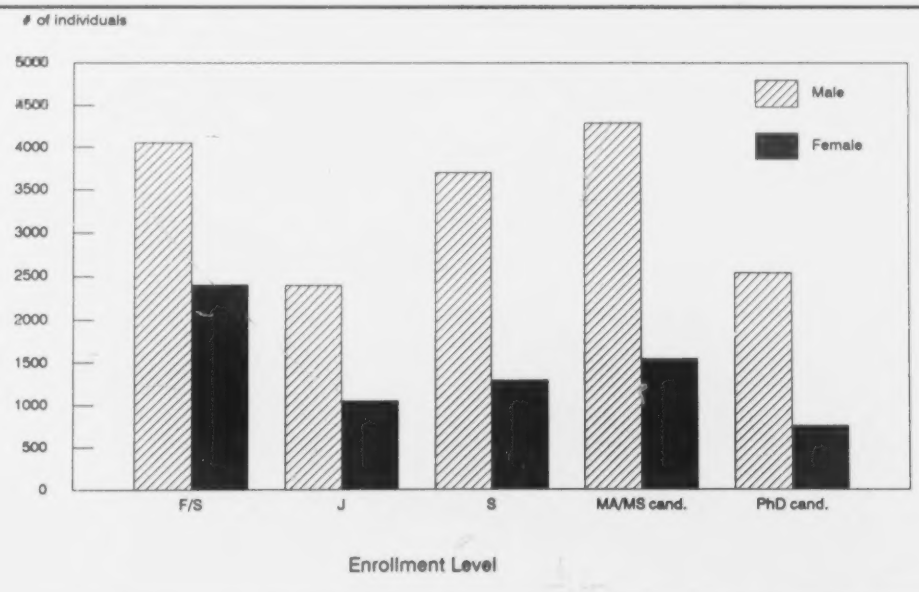


Figure 2b

Change in Distribution of Enrollment (U.S.)
1987-1988

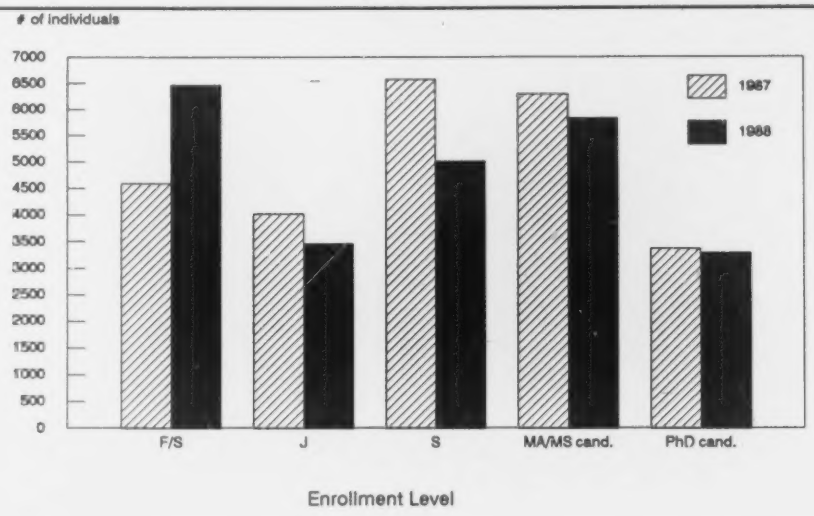


Table II

Enrollment by Level, 1988 (U.S.)

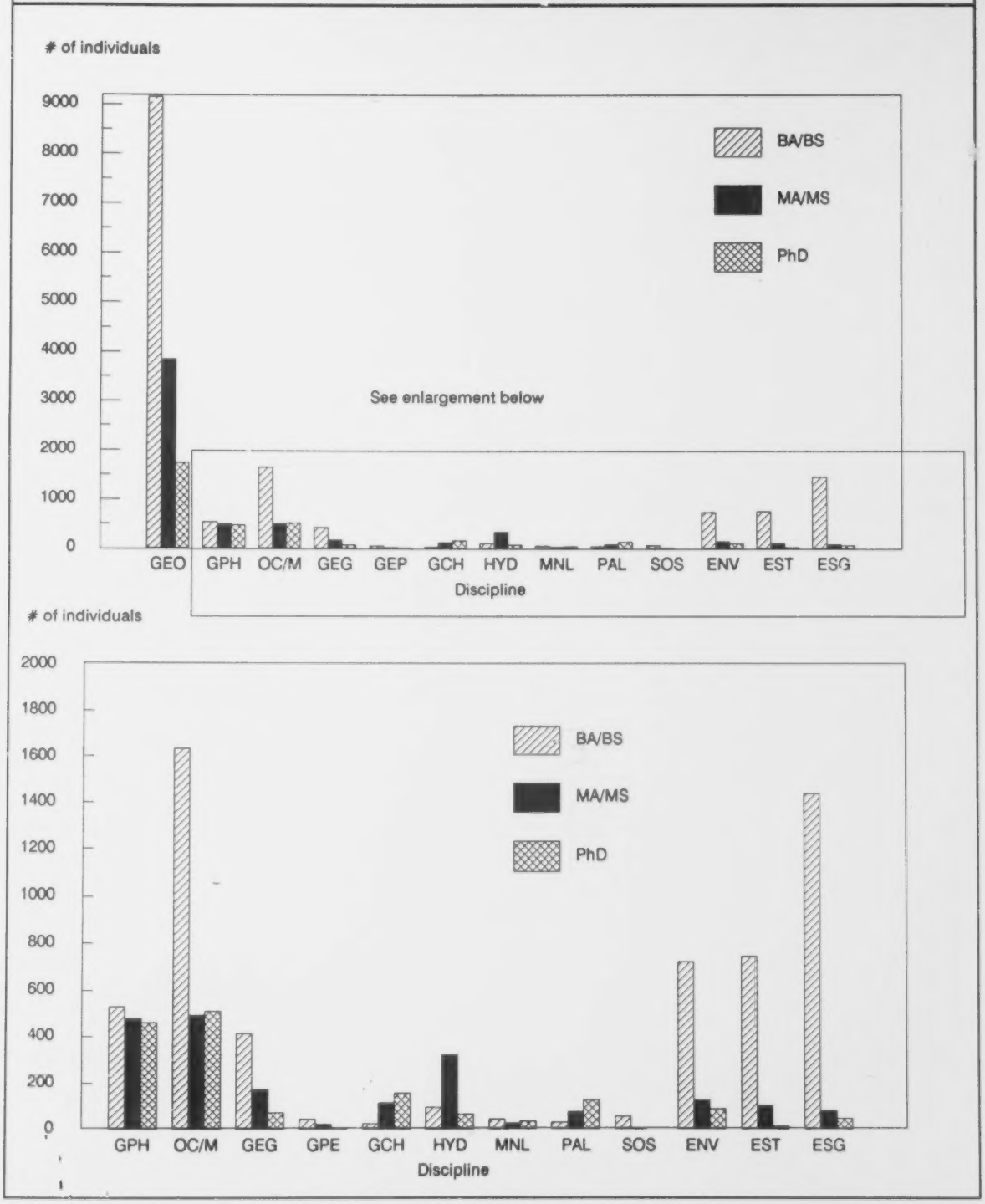
	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	3,644	189	1,130	94	15	7	32	22	12	12	221	265	814	6,457
J	2,225	111	234	88	5	4	20	6	3	27	231	219	272	3,445
S	3,278	229	269	230	20	11	41	13	12	14	269	259	351	4,996
MA/MS cand.	3,829	477	212	169	18	112	323	24	72	3	125	101	80	5,825
PhD. cand.	1,725	460	509	69	4	153	63	34	124	0	87	11	47	3,286
Total	**14,701**	**1,466**	**2,634**	**650**	**62**	**287**	**479**	**99**	**223**	**56**	**933**	**855**	**1,564**	**24,009**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

The geoscientific subdiscipline with the largest number of BA/BS candidates in 1987-88 is geology, followed by oceanography/marine science, general earth-science, earth-science teaching, and environmental science. The number of MA/MS candidates is largest in geology, followed by oceanography/marine science, geophysics, hydrology, and geological engineering. The number of PhD candidates is largest in geology, followed by oceanography/marine science, geophysics, geochemistry, and paleontology. (See Fig. 3.)

Figure 3

Distribution of 1988 Enrollment by Discipline and Level (U.S.)



Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Ethnic minority students represent 6.6% of the total enrollment in 1987-88. Minorities comprise 7.8% of the BA/BS candidates: 11.8% of the freshmen/sophomores; 4.7% of the juniors; and 4.7% of the seniors. They comprise 3.5% of the MA/MS candidates, and 6.6% of the PhD candidates. (See Fig. 4a and Table III.)

A comparison of minority geoscience enrollment in 1982-83 and 1987-88 shows an increase of ethnic minority students from 1,240 (2.6%) to 1,579 (6.6%). (See Fig. 4b.)

The 1988 *Geoscience Student Enrollment Survey* also indicates that 35 geoscience students (0.2%) are individuals with handicaps or disabilities.

Figure 4a

Distribution of Enrollment of Ethnic Minority Geoscience Students (U.S.)
1988

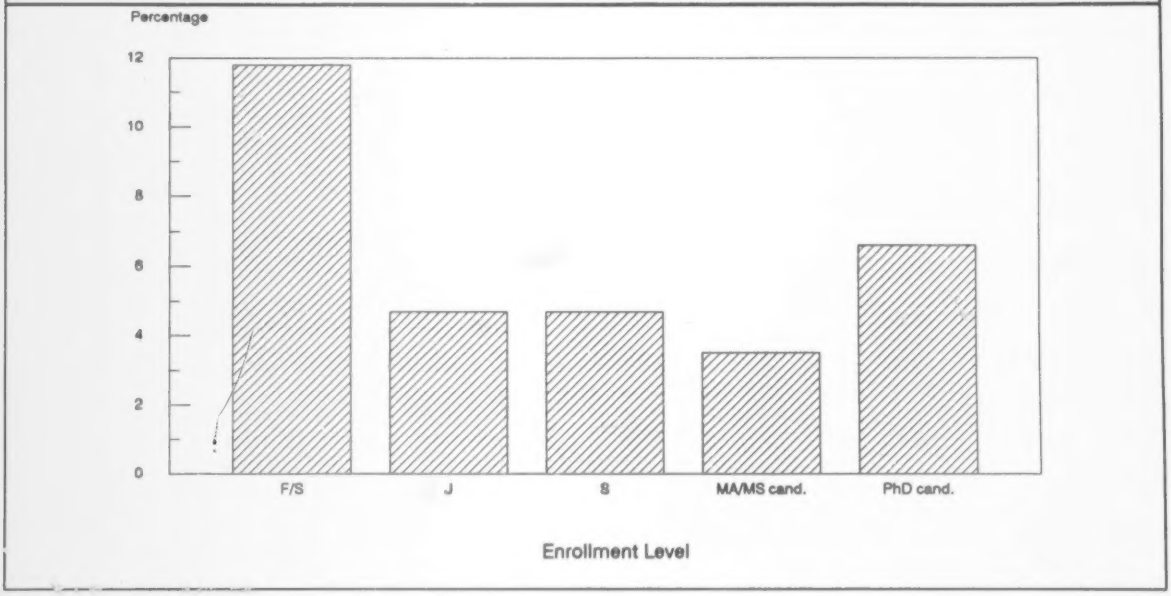


Figure 4b

Ethnic Minority Geoscience Enrollment by Level (U.S.)
1983 vs. 1988

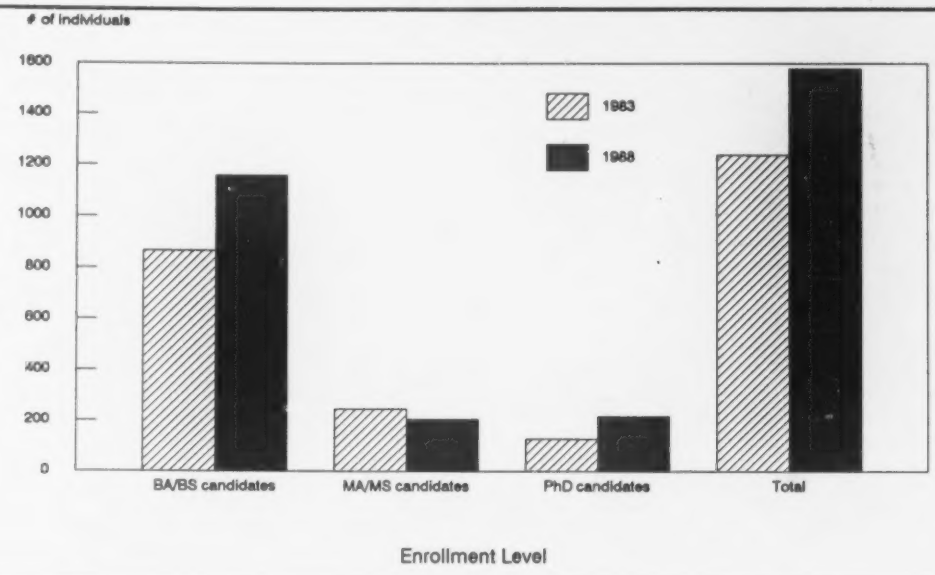


Table III

Enrollment of Ethnic Minorities, 1988 (U.S.)

	By Discipline					By Ethnic Group				
Enrollments	**GEO**	**GPH**	**EST**	**OTH**	**Total**	**BLACK**	**HISP.**	**NAT.AM**	**AS. AM.**	**Total**
F/S	335	7	145	272	759	144	478	43	94	759
J	102	6	4	50	162	63	48	19	32	162
S	168	3	16	50	237	62	89	32	54	237
MA/MS cand.	124	16	17	47	204	48	57	11	88	204
PhD cand.	96	19	28	74	217	22	50	25	120	217
Total	**825**	**51**	**210**	**493**	**1,579**	**339**	**722**	**130**	**388**	**1,579**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, EST = earth-science teaching, OTH = other

Degrees

The total number of geoscience degrees awarded in 1987-88 (3,088) is 30.1% less than the 1986-87 total (4,420). BA/BS degrees increased steadily from 1977-78 (5,982) to 1981-82 (7,253), then declined erratically to the current low in 1987-88. (See Fig. 5a.) Graduate degrees in 1987-88 (1,958) are 24.9% less than in 1986-87 (2,608). (See Fig. 5b and Table IV.)

Graduate geoscience degrees remained fairly level during the past ten years. In that period, master's degrees reached a high of 2,109 in 1985-85 and have declined 25.5% to 1,572 in 1987-88. Doctoral degrees reached a high of 615 in 1986-87, but declined 37.2% to 386 in 1987-88. It is interesting to note that the lowest levels for master's and doctoral degrees during the past ten years were in 1983-84, with awards of 1,063 MA/MS degrees and 275 PhD degrees. See Fig. 5c.)

Figure 5a

Distribution of Degrees by Level (U.S.)
1978-88

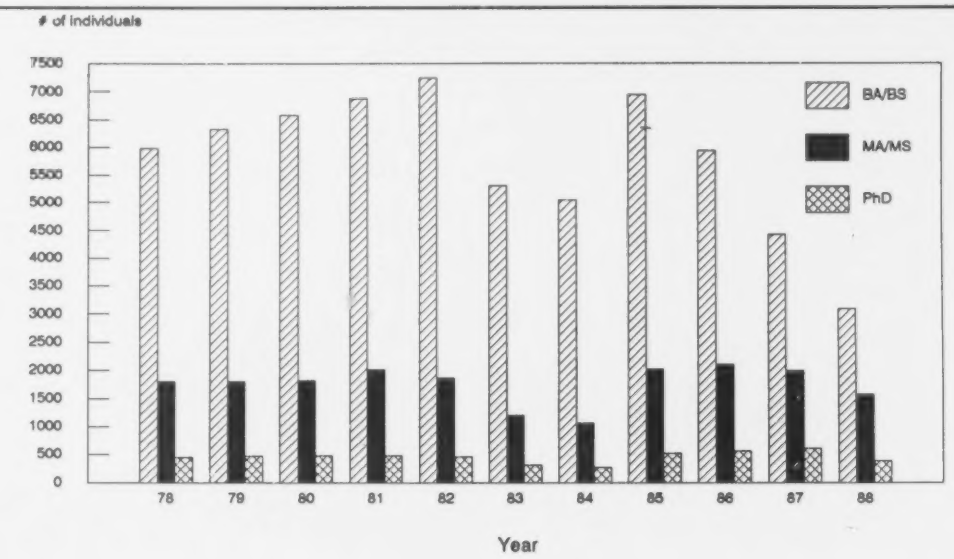
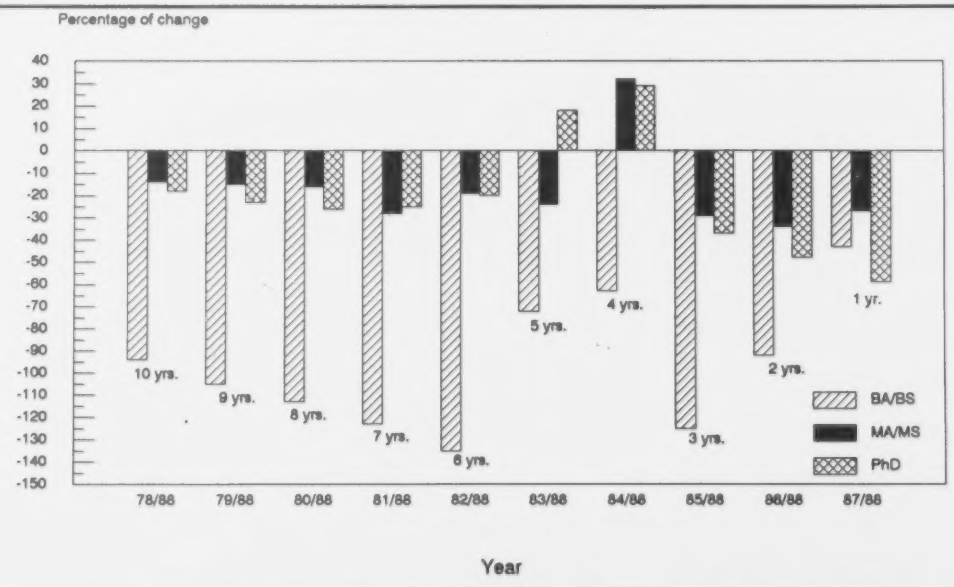


Figure 5b

Change in Degrees by Level (U.S.)
1978-1988



Note: Percentage of change is relative to 1987-88 degrees (BA/BS = 3,088, MA/MS = 1,572, PhD = 386.)

Figure 5c

Change in Distribution of Degrees (U.S.)
1987-1988

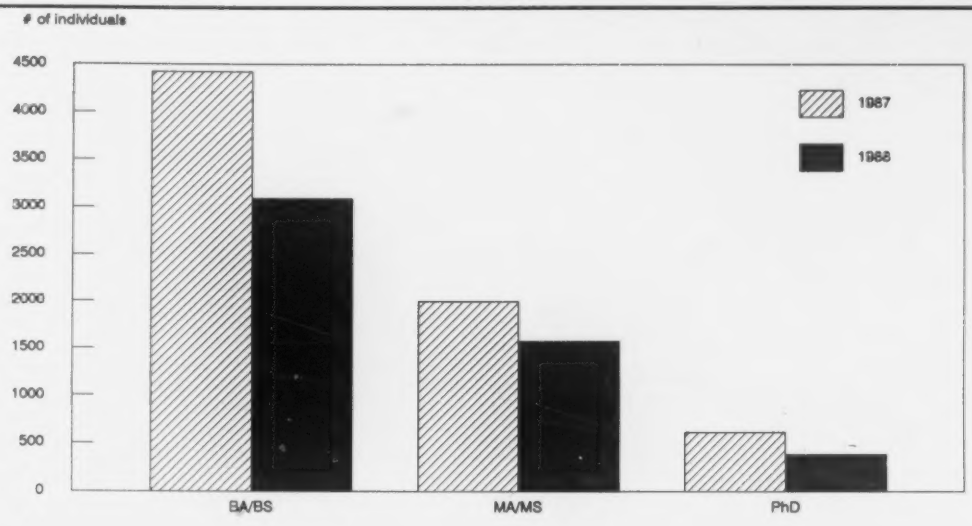


Table IVa

Degrees by Level, 1978-1988 (U.S.)

Degrees	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BA/BS	5,982	6,328	6,580	6,879	7,253	5,309	5,039	6,947	5,931	4,420	3,088
MA/MS	1,799	1,802	1,826	2,014	1,868	1,200	1,063	2,025	2,109	1,993	1,572
PhD	455	473	486	484	465	318	275	529	573	615	386
Total	**8,236**	**8,603**	**8,892**	**9,377**	**9,586**	**6,827**	**6,377**	**9,501**	**8,613**	**7,028**	**5,046**

Table IVb

Degrees by Level and Discipline (U.S.)

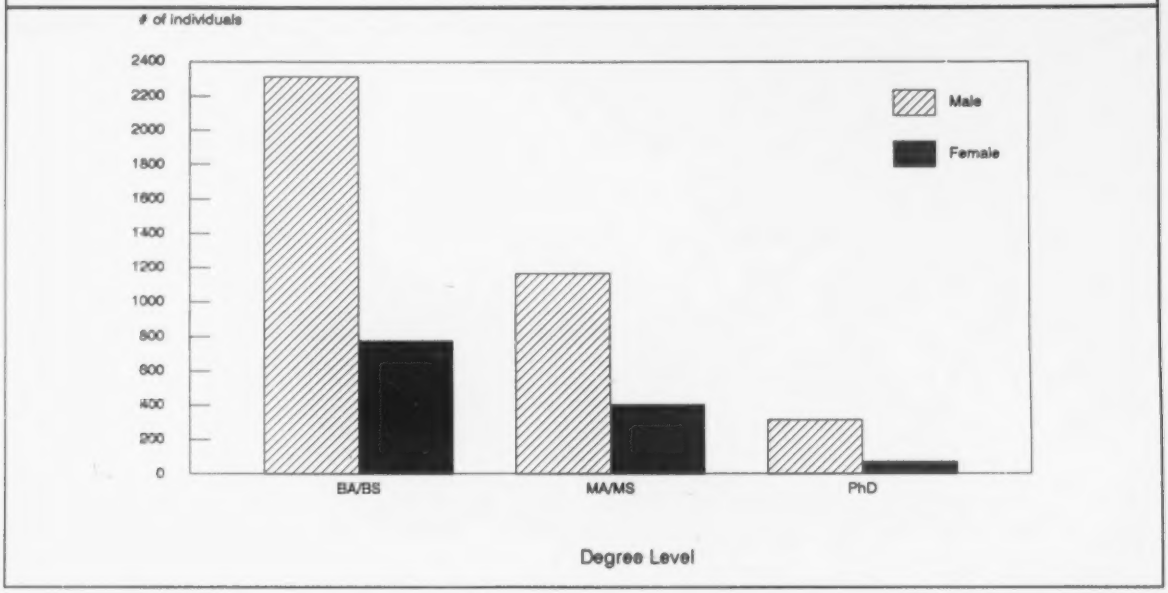
	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	2,018	183	179	157	0	5	17	12	10	4	143	109	251	3,088
MA/MS	999	204	127	40	2	27	48	8	34	1	37	8	37	1,572
PhD	188	71	47	4	0	17	5	1	16	0	19	0	18	386
Total	**3,205**	**458**	**353**	**201**	**2**	**49**	**70**	**21**	**60**	**5**	**199**	**117**	**306**	**5,046**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Women received 24.8% of the geoscience degrees awarded in 1987-88, compared to 25.2% in 1986-87. In 1987-88, women comprise 25.1% of the BA/BS recipients, 25.8% of the MA/MS recipients, and 18.1% of the PhD recipients. (See Fig. 6.)

Figure 6

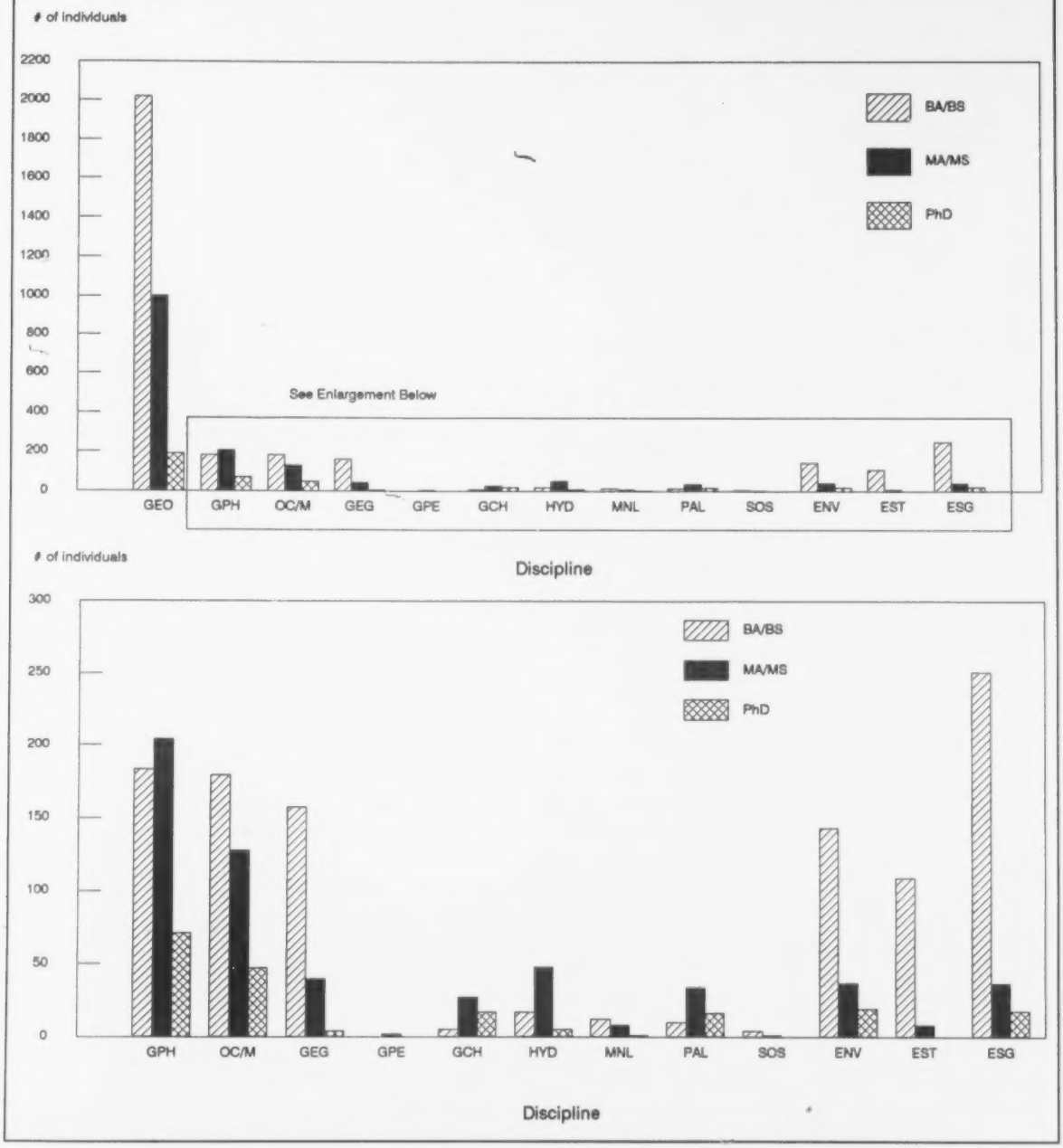
Distribution of Degrees Awarded (U.S.)
1988



The geoscientific subdiscipline with the largest number of BA/BS degrees awarded in 1987-88 is geology, followed by general earth science, geophysics, oceanography/marine science, and geological engineering. The number of MA/MS degrees awarded is largest in geology, followed by geophysics, oceanography/marine science, hydrology, and geological engineering. The number of PhD degrees awarded is largest in geology, followed by geophysics, oceanography/marine science, environmental science, and general earth science. (See Fig. 7.)

Figure 7

Distribution of 1988 Degrees by Discipline and Level (U.S.)



Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Ethnic minority students received 3.5% (176) of all geoscience degrees awarded in 1987-88. Minorities comprise 3.0% (93) of the BA/BS recipients, 3.2% (50) of the MA/MS recipients, and 8.5% (33) of the PhD recipients. (See Table V.)

A comparison of the number of geoscience degrees awarded to ethnic minorities in 1982-83 and 1987-88 shows a decrease from 202 to 176, but an increase in the percentage of the total degrees awarded from 2.1% to 3.5%. (See Fig. 8a and 8b.) This indicates a decrease in the degree awards to majority geoscience students relative to minority geoscience students during that time period.

Figure 8

Distribution of Degrees Awarded to Ethnic Minority Students
By Number of Individuals (Figure 8a), and
By Percentage (Figure 8b)
1982 vs. 1988

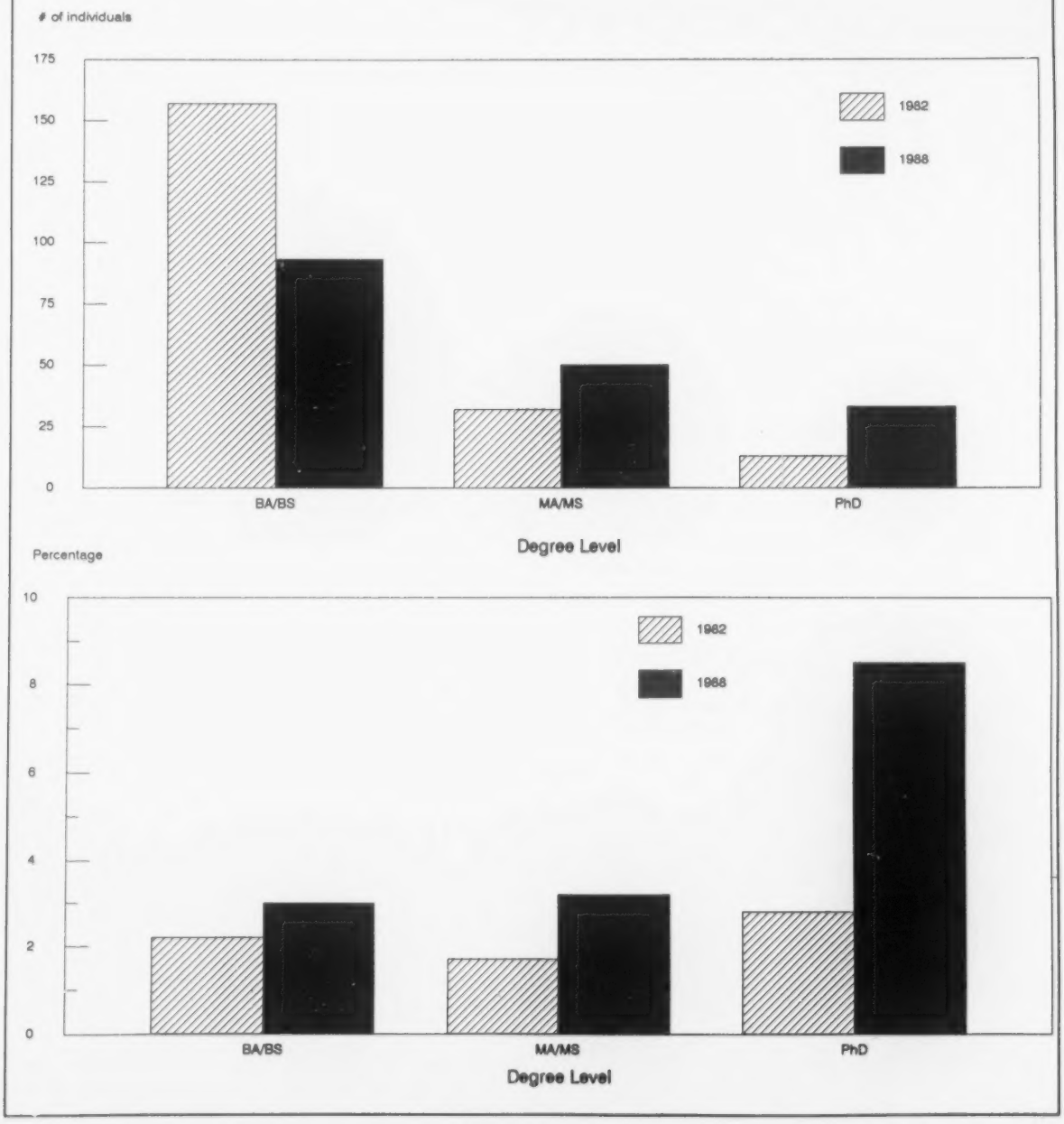


Table V

Degrees Awarded to Ethnic Minorities, 1988

	By Discipline					By Ethnic Group				
Degrees	GEO	GPH	EST	OTH	Total	BLACK	HISP.	NAT.AM	AS.-AM.	Total
BA/BS	68	2	7	16	93	21	22	31	19	93
MA/MS	24	4	6	16	50	15	13	6	16	50
PhD	11	6	6	10	33	4	6	5	18	33
Total	**103**	**12**	**19**	**42**	**176**	**40**	**41**	**42**	**53**	**176**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, EST = earth-science teaching, OTH = other

Gender and Ethnic Distributions

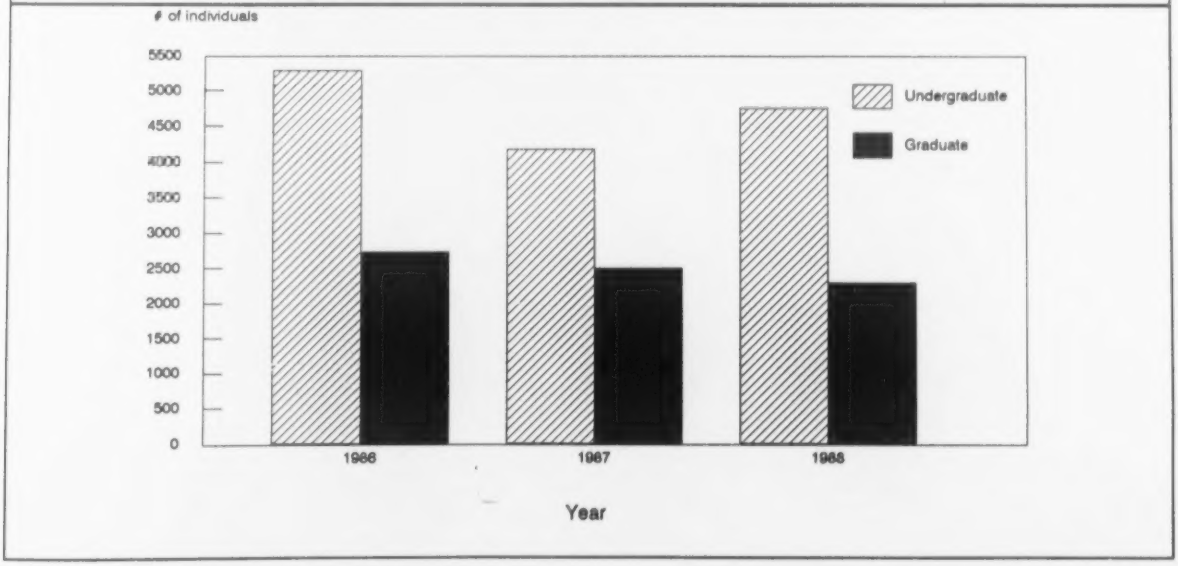
Enrollment — Women

The 1987-88 geoscience student enrollment shows an increased number of women (7,070; 29.3%) compared to 1986-87 (6,676; 26.9%). In 1987-88 women comprise a larger percentage of undergraduate geoscience student enrollment (31.9%) than graduate enrollment (25.1%), with the largest representation at the freshman/sophomore level (37.2%).

A 3-year comparison shows an increase in the representation of female undergraduates, from 25.7% to 31.9%, and roughly level representation (25%) at the graduate level. However, the enrollment of female geoscience students duringthat 3-year period shows an erratic pattern (see Fig. 9).

Figure 9

Distribution of Geoscience Enrollment of Women (U.S.) 1986-1988



The geoscientific subdiscipline with the largest enrollment of women in 1987-88 is geology, followed by oceanography/marine science, general earth science, environmental science, and geophysics. (The distribution for the total geoscience population was geology, followed by oceanography/marine science, general earth science, earth-science teaching, and environmental science.)

The number of female BA/BS candidates is largest in geology, followed by oceanography/marine science, general earth science, earth-science teaching, and environmental science. The number of female MA/MS candidates is largest in geology, followed by oceanography/marine science, geophysics, hydrology, and environmental science. The number of female PhD candidates is largest in geology, followed by oceanography/marine science, geophysics, geochemistry, and paleontology. (See Appendix I.)

Enrollment – Ethnic Minorities

The 1987-88 geoscience enrollment shows increased numbers (27.3%) of ethnic minority geoscience students (1,579, 6.6%) compared to 1982-83 (1,240, 2.6%). In 1987-88, a larger percentage of ethnic minority students was enrolled at the undergraduate level (7.8%) than at the graduate level (4.6%), with the largest representation of ethnic minority students at the freshman/sophomore level (11.8%).

A 5-year comparison shows an increase in the representation of ethnic minority undergraduates, from 867 (2.4%) in 1982-83 to 1,158 (7.8%) in 1987-88, and at the graduate level from 373 (3.6%) in 1982-83 to 421 (4.6%) in 1987-88. (Data on ethnic minority geoscience student enrollment was not collected from 1983 to 1987.) (See Fig. 4b.)

The geoscientific subdiscipline with the largest enrollment of ethnic minority students at all degree levels in 1987-88 is geology, followed by "other" geosciences ("other" exludes geology, geophysics and earth-science teaching), and earth-science teaching (see Appendix I). (Note: the only subdisciplines assessed in the ethnic minority student survey were geology, geophysics, earth-science teaching, and "other.")

The distribution of minority geoscience student enrollment by ethnic group in 1987-88 shows the largest group is Hispanic, which is 45.7% of the minority geoscience enrollment, followed by Asian-American, 24.6%; Black, 21.5%; and Native American, 8.2%. (See Fig. 10 and 10b.) This distribution varies only slightly from that of minority geoscience student enrollment in 1982-83: Hispanics, 41.7%; Asian-Americans, 27.7%; Blacks, 24.2%; and Native Americans, 6.4%.

When assessed by level, the ethnic group with the largest representation among bachelor's-degree candidates in 1987-88 is Hispanic, 615; followed by Black, 269; Asian-American, 180; and Native American, 95. For master's-degree candidates, the largest ethnic minority group is Asian-American, 88; followed by Hispanic, 57; Black, 48; and Native American, 11. For doctoral-degree candidates, the largest ethnic minority group is Asian-American, 120, followed by Hispanic, 50; Native American, 25; and Black, 22. (See Fig. 10b.)

Figure 10a

Distribution of Ethnic Minority Enrollment by Discipline (U.S.)
1988

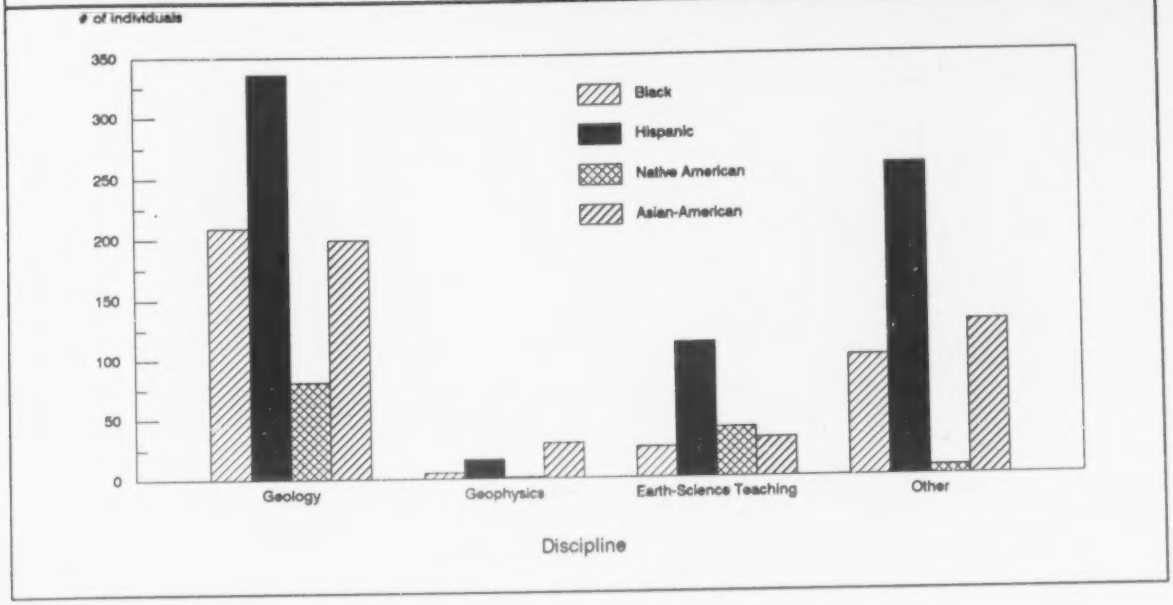
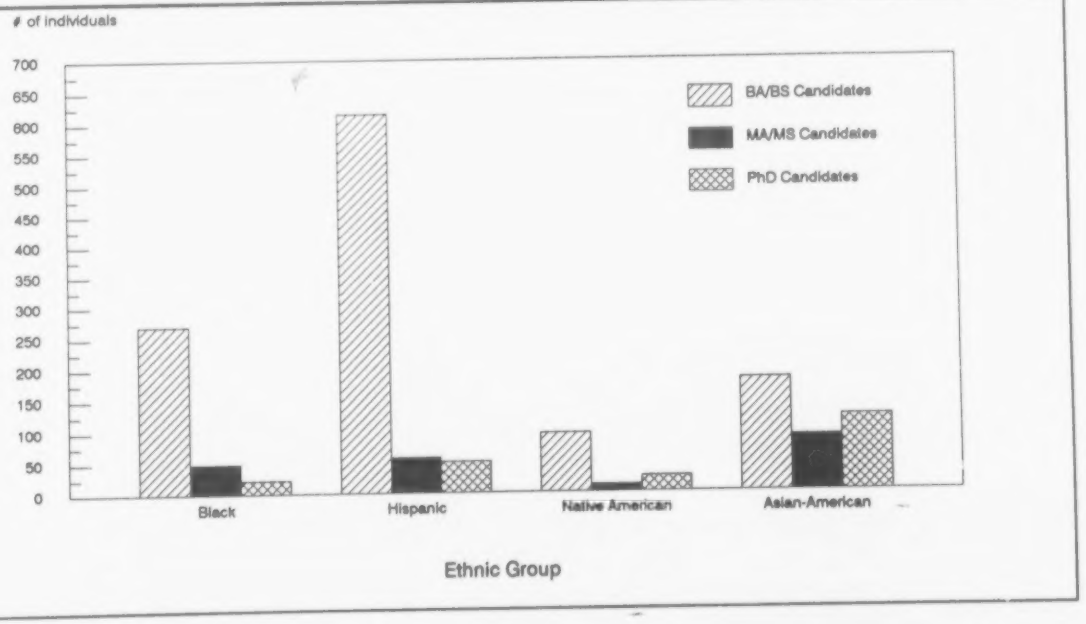


Figure 10b

Distribution of Ethnic Minority Enrollment (U.S.)
1988

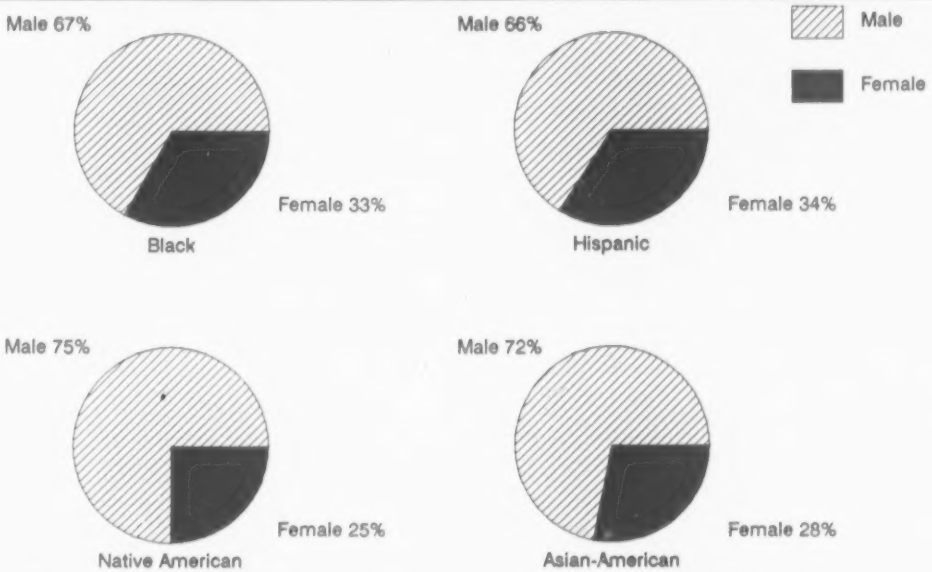


Enrollment — Female Ethnic Minorities

The number of female ethnic minority students enrolled in 1987-88 is 501 (31.7%). (See Fig. 11.) In 1987-88, a larger percentage of female ethnic minority students was enrolled at the undergraduate level (35.2% of minority enrollment) than at the graduate level (22.0%), with the largest representation of female ethnic minority students at the freshman/sophomore level (18.1% of minority enrollment).

Figure 11

Distribution by Gender of Ethnic Minority Enrollment (U.S.) 1988



The geoscientific subdiscipline with the largest enrollment of female ethnic minority students at all degree levels in 1987-88 is geology, followed by "other" geosciences ("other" excludes geology, geophysics and earth-science teaching), and earth-science teaching (see Appendix I). This distribution is the same as that for the total ethnic minority enrollment. (Note: the only subdisciplines assessed in the ethnic minority student survey were geology, geophysics, earth-science teaching, and "other.")

The distribution of female minority geoscience student enrollment by ethnic group in 1987-88 shows the largest group is Hispanic, which is 49.3% of the female minority geoscience enrollment, followed by Black, 22.5%; Asian-American, 21.6%; and Native American, 6.6%.

When assessed by level, the ethnic group with the largest representation of women among bachelor's-degree candidates in 1987-88 is Hispanic, 208; followed by Black, 66; Asian-American, 53; and Native American, 14. For master's-degree candidates, the largest ethnic minority group of women is Black, 19; followed by Asian-American, 16; Hispanic, 14; and Native American, 2. For doctoral-degree candidates, the largest ethnic minority group of women is Asian-American, 17; followed by Hispanic, 9; and Native American and Black, 8 each.

Degrees — Women

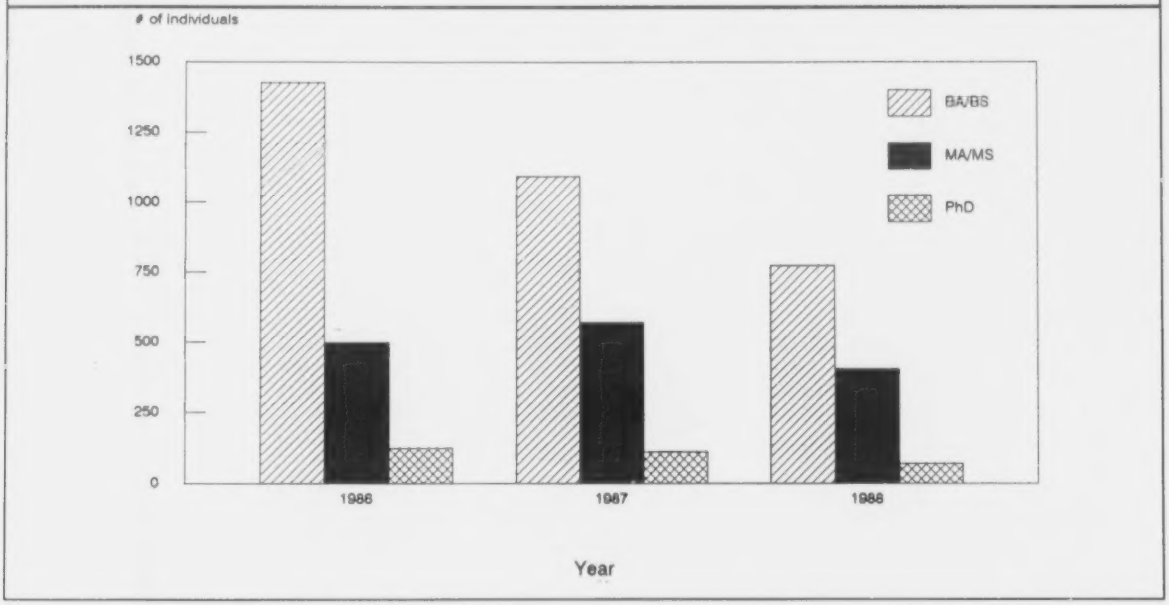
The number of women receiving degrees in geoscience decreased in 1987-88: 1,249 (24.8%) compared to 1,773 (25.2%) in 1986-87, a decline of 29.5% (compared to 30.1% for the total geoscience population). The decline is greatest at the PhD level, where 36.9% fewer women received degrees in 1987-88 than in 1986-87. (See Fig. 12.)

However, the proportionate representation by female degree recipients has increased at most levels. At the BA/BS level, 25.0% of those receiving geoscience degrees in 1987-88 were women, compared to 24.7% in 1986-87, and at the PhD level, 18.1% in 1987-88 compared to 18.0% in 1986-87. The only decline was at the MA/MS level: 25.8% in 1987-88 compared to 28.6% in 1986-87.

A 3-year comparison shows an erratic pattern in the quantitative and proportionate representation of female geoscience degree recipients. In general, the proportionate representation by women is largest at the MA/MS level compared to other degrees. (See Fig. 12.)

Figure 12

Distribution of Degrees Awarded to Women (U.S.)
1986-1988



The geoscientific subdiscipline with the largest number of female BA/BS degree recipients in 1987-88 is geology, followed by general earth science, geophysics, environmental science, and earth-science teaching. The number of female MA/MS degree recipients is largest in geology, followed by oceanography/marine science, geophysics, environmental science, and equally, hydrology, paleontology, and general earth science. The number of female PhD degree recipients is largest in geology, followed by geophysics, oceanography/marine science, and equally, paleontology, environmental science, and general earth science. (See Appendix I.)

Degrees — Ethnic Minorities

The number of ethnic minority students receiving degrees in geoscience declined 12.9% from 202 in 1981-82 to 176 in 1987-88. However, the proportionate representation of ethnic minority students increased from 2.1% to 3.5% over the same time period. (See Fig. 8a and 8b.)

The largest increase is at the PhD level, from 13 (2.8%) in 1981-82 to 33 (8.5%) in 1987-88. There was also an increase at the MA/MS level, from 32 (1.7%) in 1981-82 to 50 (3.2%) in 1987-88. There was a decrease at the BA/BS level, from 157 in 1981-82 to 93 in 1987-88, but these numbers represent an increase in proportionate representation from 2.2% to 3.0%.

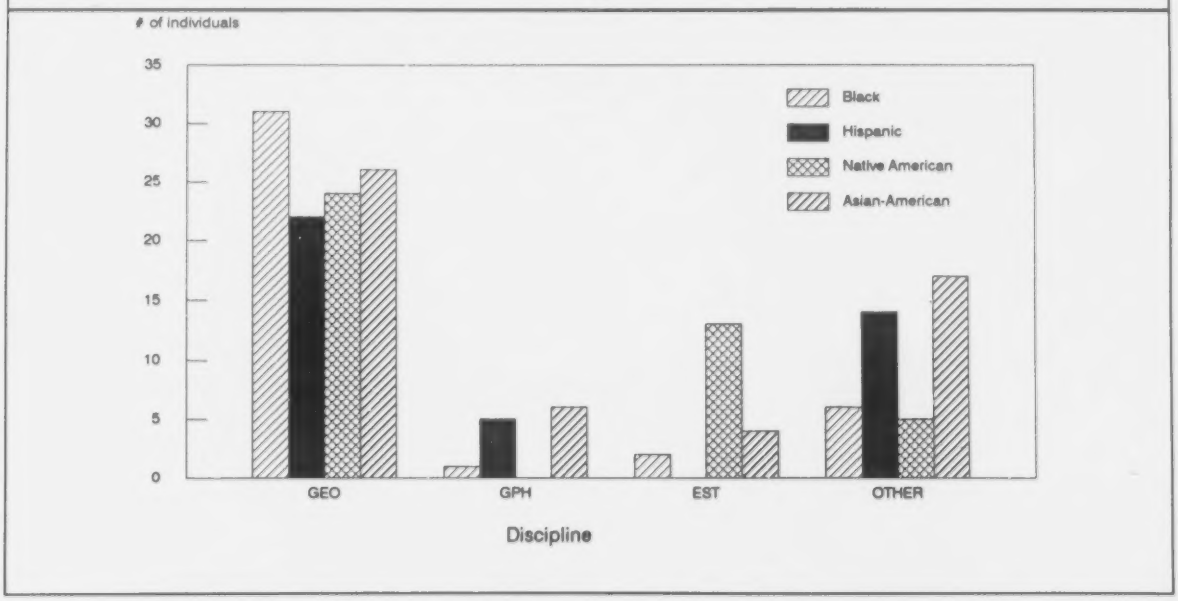
The geoscientific subdiscipline with the largest number of ethnic minority degree recipients in 1987-88 is geology, followed by "other" geosciences ("other" excludes geology, geophysics, and earth-science teaching) and earth-science teaching. This distribution is the same at all degree levels. (See Fig. 13a.) (Note: the only subdisciplines assessed in the ethnic minority student survey were geology, geophysics, earth-science teaching, and "other.")

The distribution of minority geoscience-student degrees by ethnic group in 1987-88 shows the largest group is Asian-American, with 30.1% of the degrees awarded, followed by Native American, 23.9%; Hispanic, 23.3%; and Black, 22.7%. This distribution varies significantly from that of the minority geoscience-student degrees by ethnic group in 1981-82: Hispanic, 52.5%; Asian-American, 22.8%; Black, 21.8%; and Native American, 3.0%. (See Fig. 13b.)

When assessed by level, the ethnic group with the largest number of BA/BS degrees awarded in 1987-88 is Native American, 31, followed by Hispanic, 22; Black, 21; and Asian -American, 19. The ethnic group with the largest number of MA/MS degrees awarded is Asian-American, 16, followed by Black,15; Hispanic, 13; and Native American, 6. The ethnic group with the largest number of PhD degrees awarded is Asian-American, 18, followed by Hispanic, 6; Native American, 5; and Black, 4. (See Fig. 13b.)

Figure 13a

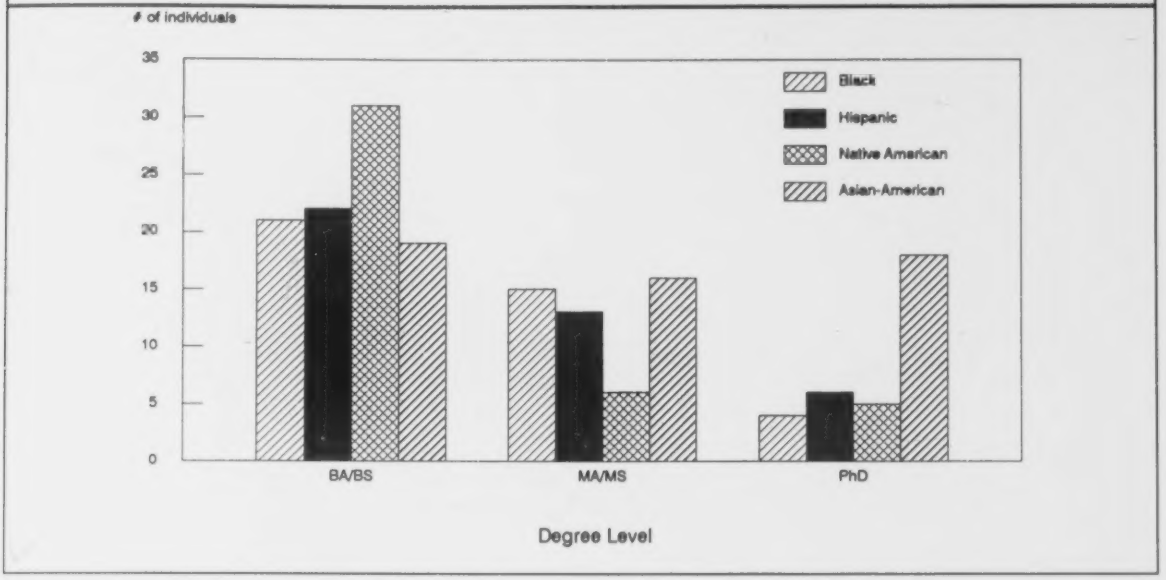
Distribution of Ethnic Minority Degrees by Discipline (U.S.)
1988



Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, EST = earth-science teaching.

Figure 13b

Distribution of Ethnic Minority Degrees (U.S.)
1988

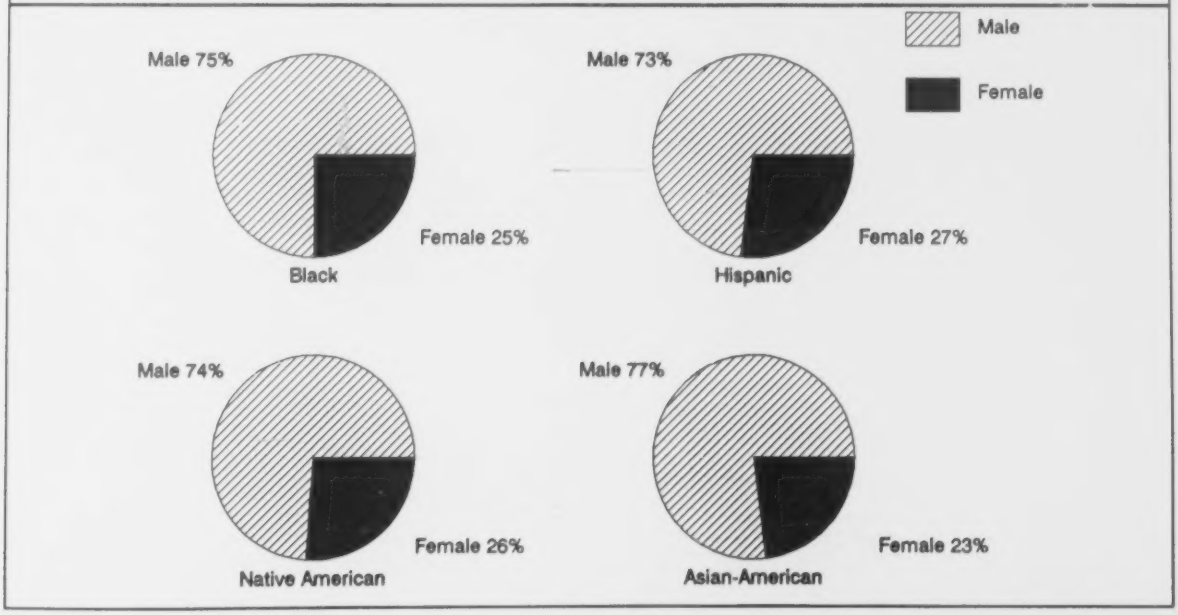


Degrees — Female Ethnic Minorities

The number of female ethnic-minority students receiving degrees in geoscience was 44 in 1987-88 (25.0%). Proportionately, this figure is slightly larger than that for all women receiving geoscience degrees (24.8%). (See Fig. 14.)

Figure 14

Distribution by Gender of Degrees Awarded to Ethnic Minorities (U.S.)
1988



The geoscientific subdiscipline with the largest number of female ethnic-minority degree recipients in 1987-88 is geology, followed by "other" geosciences ("other" excludes geology, geophysics, and earth-science teaching) and earth-science teaching. This distribution is the same as that for all ethnic minority degree recipients, and is true at all degree levels. (Note: the only subdisciplines assessed in the ethnic minority student survey were geology, geophysics, earth-science teaching, and "other.")

The distribution of female ethnic-minority geoscience degrees by ethnic group in 1987-88 shows the largest group is Asian-American, with 12 of the 44 degrees awarded, followed by Native American and Hispanic, 11 each; and Black, 10.

When assessed by level, the ethnic group of women with the largest number of BA/BS degrees awarded in 1987-88 is Native American, 7, followed by Black and Asian-American, 5 each; and Hispanic, 4. The ethnic group of women with the largest number of MA/MS degrees awarded is Asian-American, 5, followed by Black and Hispanic, 4 each; and Native American, 1. The ethnic groups of women with the largest number of PhD degrees awarded are Hispanic and Native American, 3 each, followed by Asian-American, 2; and Black, 1.

Survey Results – Canadian Data

Enrollment

The 1987-88 undergraduate enrollment in geoscience (3,552) was 17.0% more than that of 1986-87 (3,035). Enrollment at the undergraduate level increased from 1977-78 (2,933) to 1982-83 (5,894), then declined until 1986-87 (3,035). The lowest undergraduate enrollment in this 10-year period was in 1977-78. (See Fig. 15a, 15b and Table VI.)

Enrollment at the graduate level in 1987-88 (1,318) was 1.2% more than that of 1986-87 (1,302). This figure matches the graduate enrollment level in 1984-85 (1,318), establishing two high points for the 10-year period. The lowest level of graduate enrollment was in 1978-79 (871). Graduate geoscience enrollment remained fairly level during the past 10 years, varying only 447 students compared to the undergraduate variation of 2,961 students (see Fig. 15c).

Total 1987-88 enrollment (4,870) is 12.3% more than enrollment in 1986-87 (4,337).

Figure 15a

Distribution of Enrollment by Level, 1978-1988
Canada

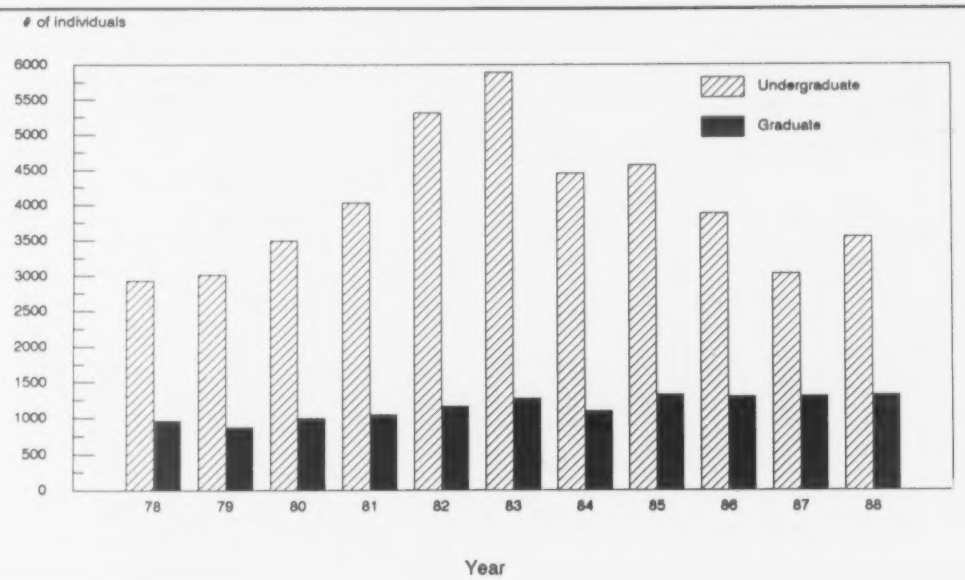
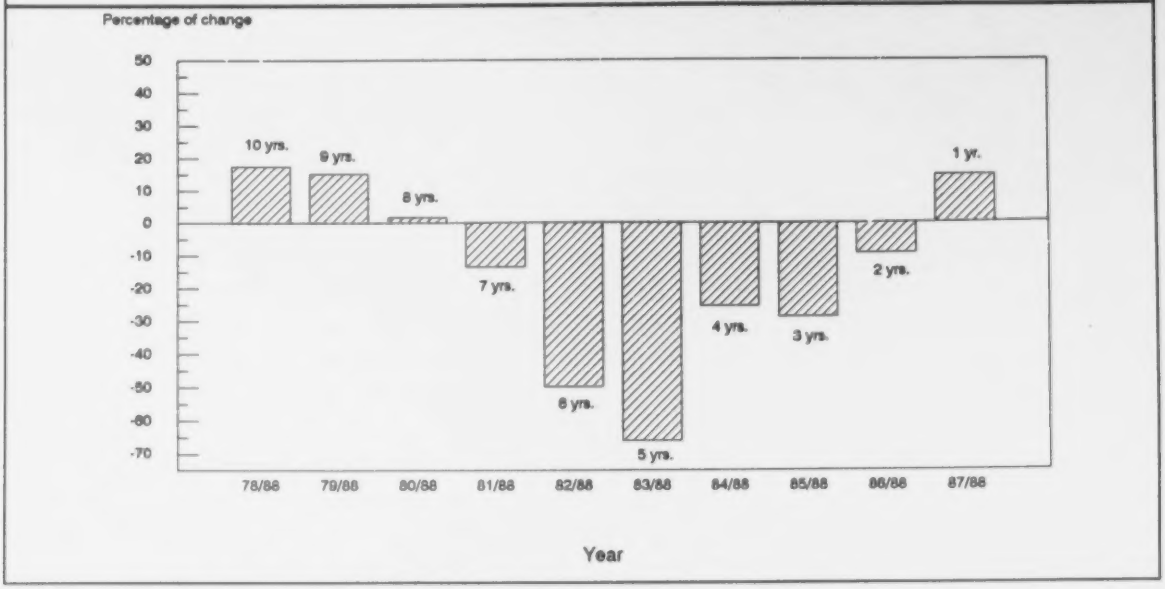


Figure 15b

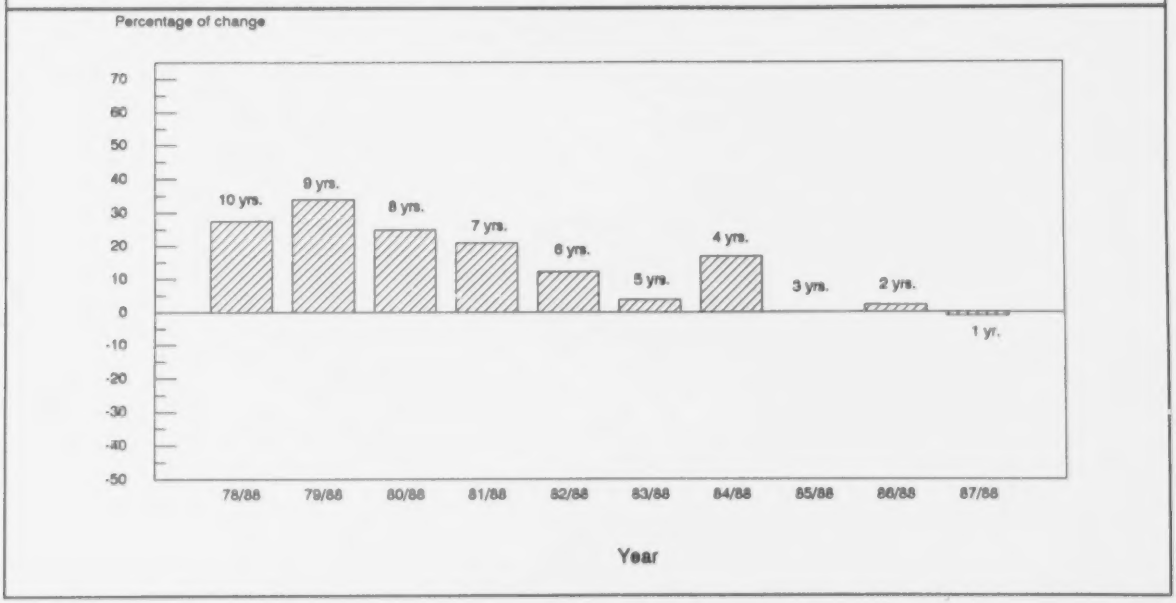
Change in Undergraduate Enrollment, 1978-1988
Canada



Note: Percentage of change is relative to 1987-88 undergraduate enrollment (3,552).

Figure 15c

Change in Graduate Enrollment, 1978-1988
Canada



Note: Percentage of change is relative to 1987-88 graduate enrollment (1,318).

Table VI

Canadian Enrollment, 1978-1988

Enrollments	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Undergraduate	2,933	3,017	3,492	4,028	5,316	5,894	4,450	4,563	3,880	3,035	3,552
Graduate	956	871	992	1,041	1,159	1,269	1,095	1,318	1,291	1,302	1,318
Total	**3,889**	**3,888**	**4,484**	**5,069**	**6,475**	**7,163**	**5,545**	**5,881**	**5,171**	**4,337**	**4,870**

The distribution of 1987-88 enrollment by level is shown in Table VII. Geoscience student enrollment increased significantly at the freshman/sophomore level in 1987-88 (83.9%) as compared to 1986-87 (see Fig. 16a). All other class levels show decreased enrollment in 1987-88: juniors, -9.5%, seniors, -24.10%, and master's candidates, -6.4%. Doctoral students increased 15.3%. (See Fig. 16b.)

The enrollment of women also increased. Women represent 24.0% of the total enrollment in 1987-88, compared to 22.1% in 1986-87. In 1987-88, women comprise 25.4% of the BA/BS candidates: 27.6% of the freshmen/sophomores, 23.9% of the juniors, and 21.6% of the seniors. At the graduate level, women comprise 22.8% of the MA/MS candidates, and 16.5% of the PhD candidates. (See Fig. 16a and Appendix I.)

Figure 16a

Distribution of Enrollment, 1988
Canada

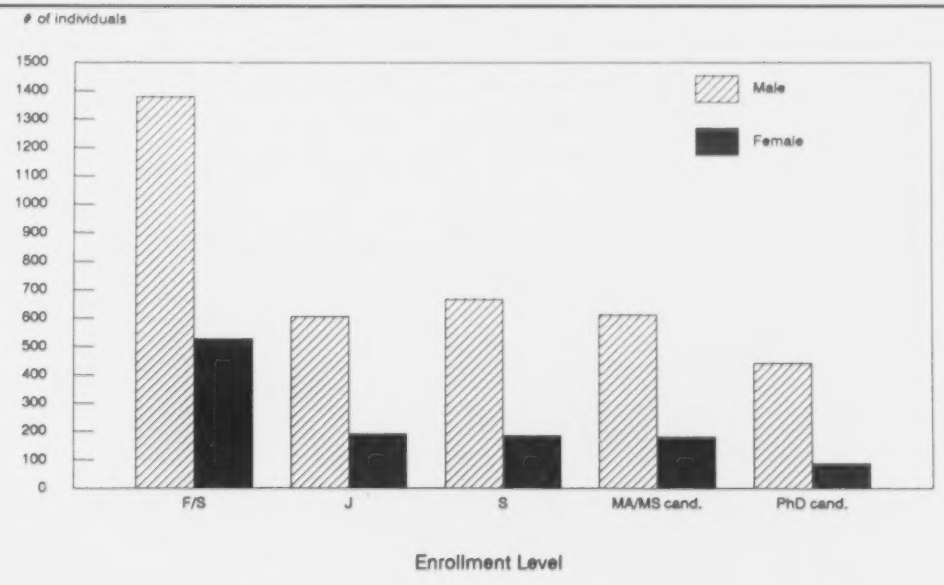


Figure 16b

Change in Distribution of Enrollment, 1987-1988
Canada

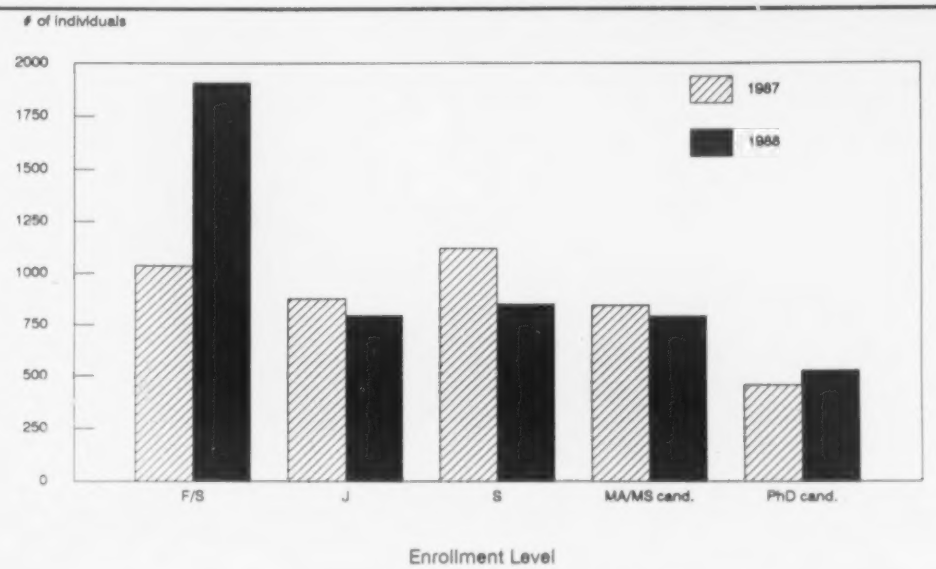


Table VII

Canadian Enrollment by Level, 1988

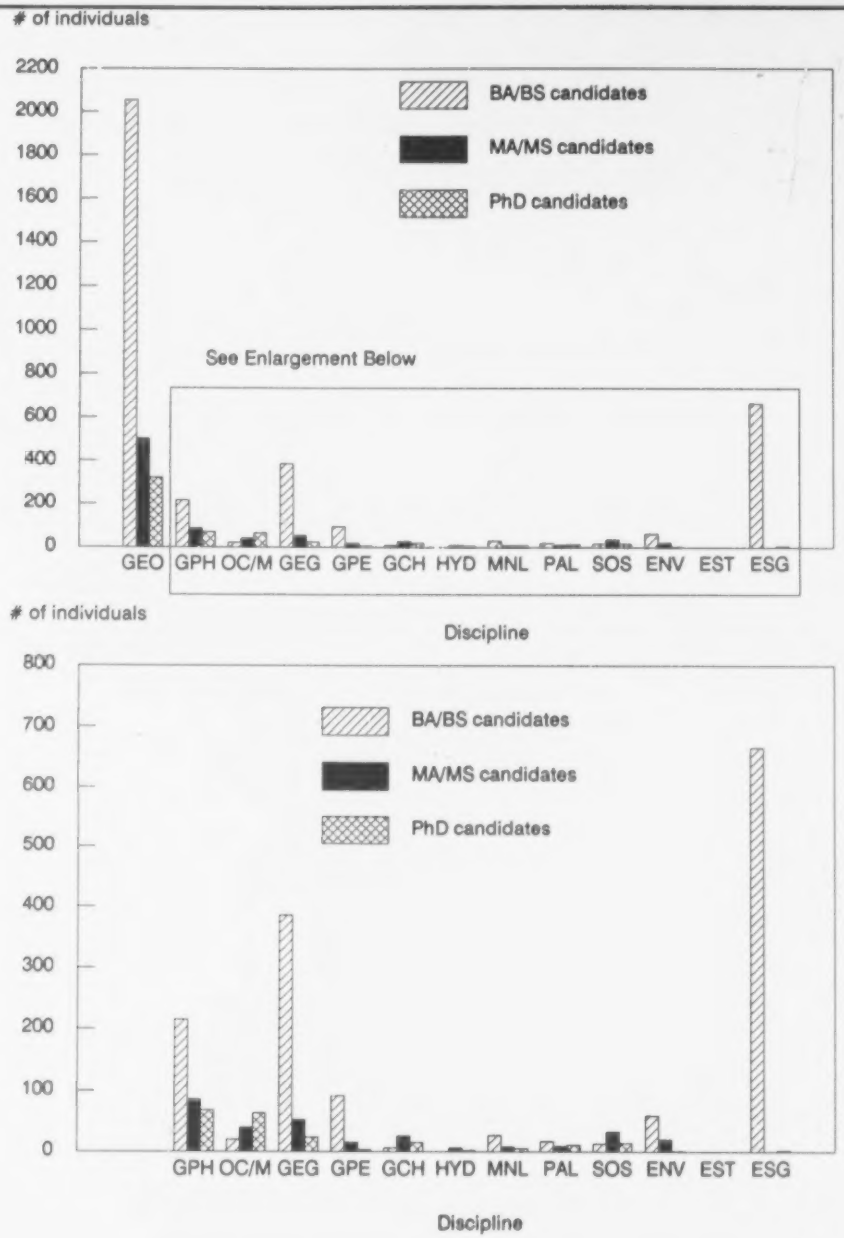
	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	1,108	54	0	103	10	0	0	9	16	4	23	0	580	1,907
J	446	64	10	175	29	4	0	15	0	4	10	0	37	794
S	500	97	10	107	52	2	0	2	1	5	26	0	49	851
MA/MS cand.	501	84	39	52	15	25	6	8	9	32	20	0	0	791
PhD cand.	320	68	63	23	3	15	2	5	11	14	1	0	2	527
Total	**2,875**	**367**	**122**	**460**	**109**	**46**	**8**	**39**	**37**	**59**	**80**	**0**	**668**	**4,870**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

The geoscientific subdiscipline with the largest number of BA/BS candidates in 1987-88 is geology, followed by general earth science, geological engineering, geophysics, and geophysical engineering. The number of MA/MS candidates is largest in geology, followed by geophysics, geological engineering, oceanography/marine science, and soil science. The number of PhD candidates is largest in geology, followed by geophysics, oceanography/marine science, geological engineering, and geochemistry. (See Fig. 17.)

Figure 17

Distribution of 1988 Enrollment by Discipline and Level
Canada



Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Degrees

The total number of geoscience degrees awarded in 1987-88 (1,075) is 12.3% less than the 1986-87 total (1,226). BA/BS degrees increased from 1977-78 (569) to 1981-82 (829), then declined erratically to the current low in 1987-88. (See Fig. 18a and Table VIII.) Graduate degrees in 1987-88 (301) are 2.7% more than in 1986-87 (293).

Graduate geoscience degrees remained fairly level during the past ten years. In that period, master's degrees reached a high of 232 in 1985-85 and 1985-86 and have declined 2.6% to 226 in 1987-88. Doctoral degrees reached a high of 80 in 1986-87 but declined 23.8% to 61 in 1986-87, then increased 23.0% to 75 in 1987-88. During the past 10 years, the lowest level for master's degrees was in 1983-84 (144), the lowest level for doctoral degrees was in 1984-85 (51). The highest level for master's and doctoral degrees was in 1985-86, with awards of 232 degrees and 80 degrees respectively. (See Fig. 18b.)

Figure 18a

Distribution of Degrees by Level, 1978-1988
Canada

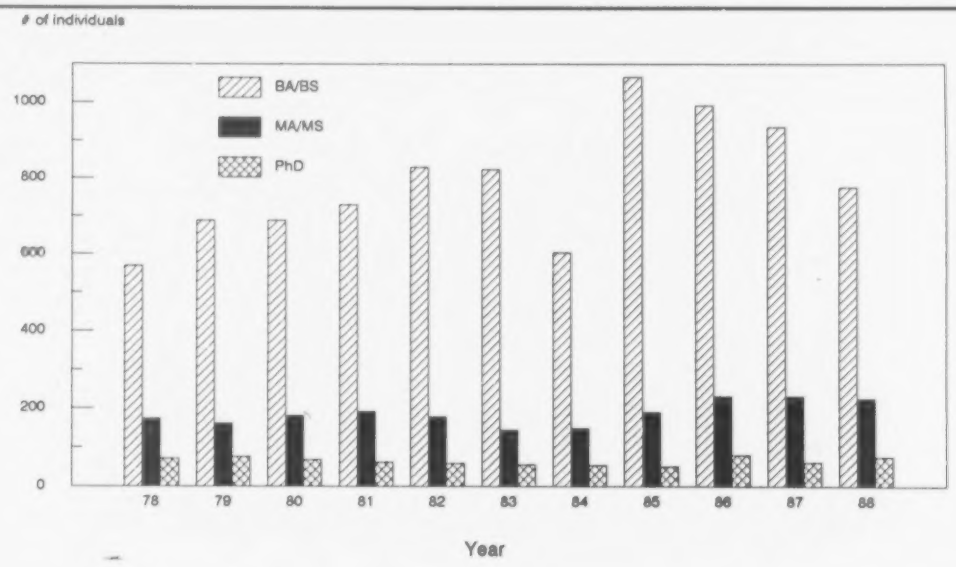
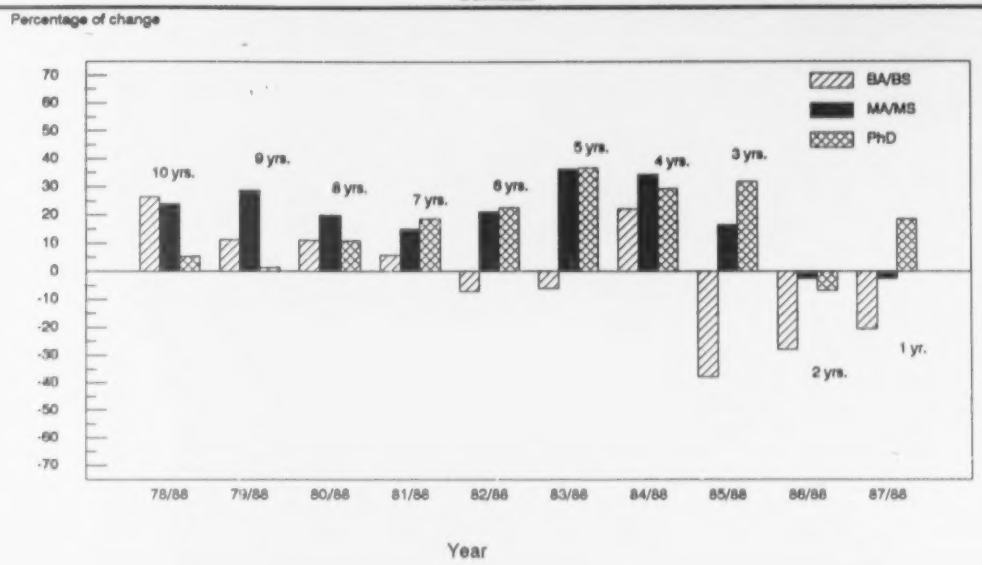


Figure 18b

Change in Degrees by Level, 1978-1988
Canada



Note: Percentage of change is relative to 1987-88 degrees (BA/BS = 774, MA/MS = 226, PhD = 75).

Table VIII

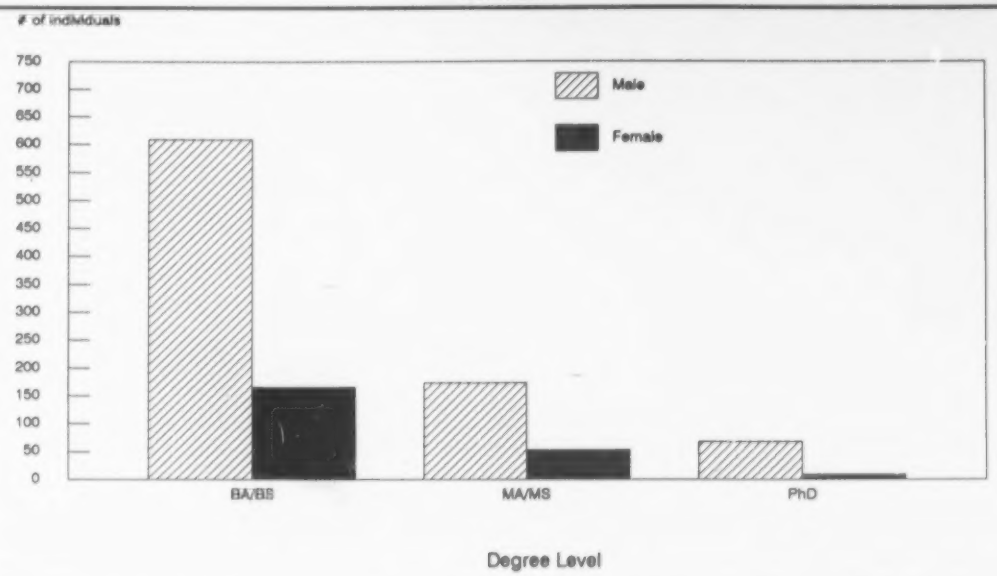
Degrees by Level, 1978-1988
Canada

Degrees	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
BA/BS	569	687	688	730	829	822	603	1,067	991	933	774
MA/MS	172	161	181	192	178	144	148	189	232	232	226
PhD	71	76	67	61	58	55	53	51	80	61	75
Total	**812**	**924**	**936**	**983**	**1,065**	**1,021**	**804**	**1,307**	**1,303**	**1,226**	**1,075**

Women received 21.0% of the geoscience degrees awarded in 1987-88, compared to 25.8% in 1986-87. They comprise 21.3% of the BA/BS recipients, 23.4% of the MA/MS recipients, and 10.6% of the PhD recipients. (See Fig. 19 and Appendix I.)

Figure 19

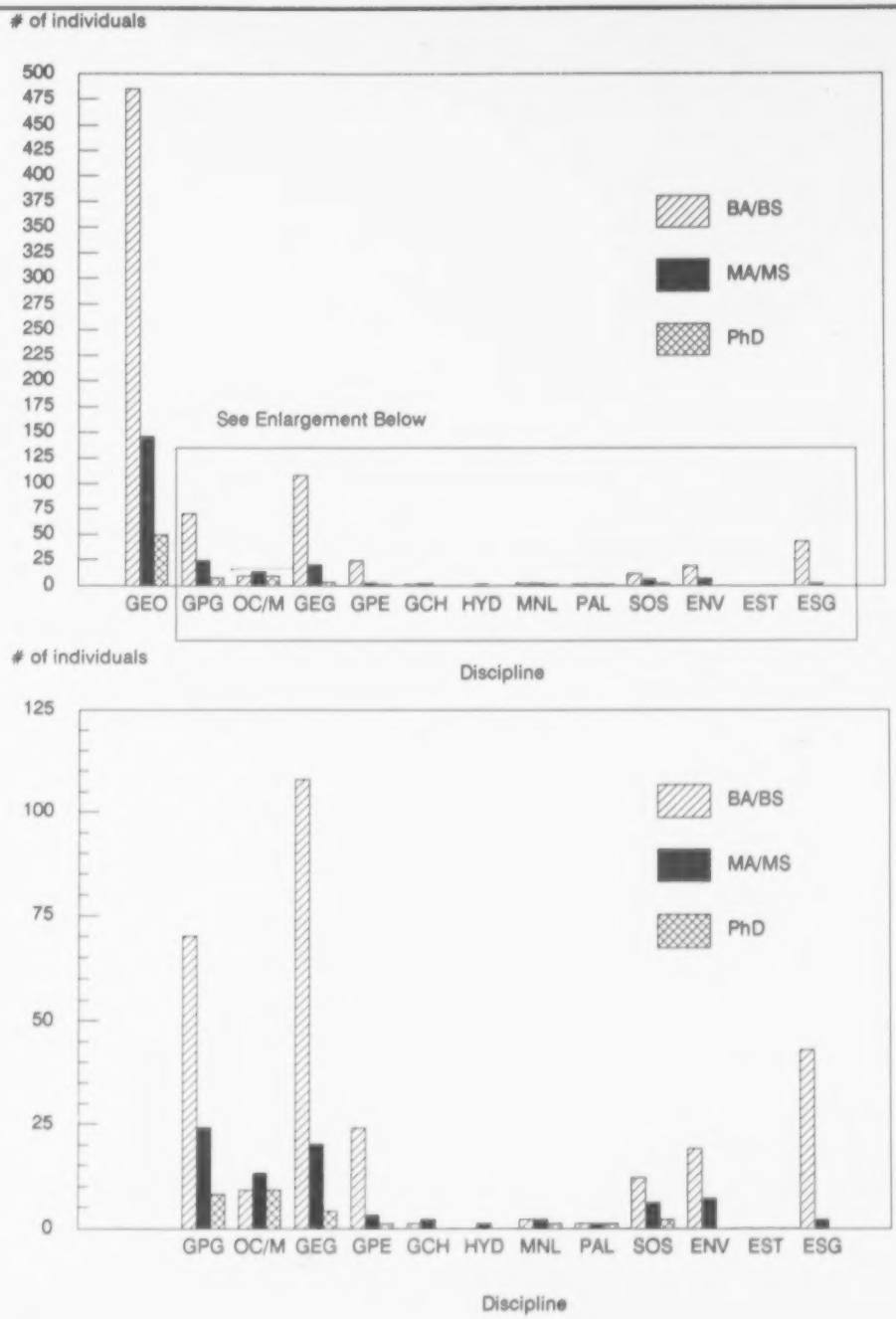
Distribution of 1988 Degrees Awarded
Canada



The geoscientific subdiscipline with the largest number of BA/BS degrees awarded in 1987-88 is geology, followed by geological engineering, geophysics, geophysical engineering, and environmental science. The number of MA/MS degrees awarded is largest in geology, followed by geophysics, geological engineering, oceanography/marine science, and environmental science. The number of PhD degrees awarded is largest in geology, followed by oceanography/marine science, geophysics, geological engineering, and soil science. (See Fig. 20.)

Figure 20

Distribution of 1988 Degrees by Discipline and Level
Canada



Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Table IX

Canadian Degrees by Level and Discipline, 1988

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	485	70	9	108	24	1	0	2	1	12	19	0	43	774
MA/MS	145	24	13	20	3	2	1	2	1	6	7	0	2	226
PhD	49	8	9	4	1	0	0	1	1	2	0	0	0	75
Total	**679**	**102**	**31**	**132**	**28**	**3**	**1**	**5**	**3**	**20**	**26**	**0**	**45**	**1,075**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Gender Distribution

Enrollment — Women

The 1987-88 geoscience student enrollment shows an increased number of women (1,168, 24.0%) compared to 1986-87 (960, 22.1%). In 1987-88 women comprise a larger percentage of undergraduate geoscience student enrollment (25.4%) than graduate enrollment (20.3%), with the largest representation at the freshman/sophomore level (27.6%). (See Fig. 16a.)

A 2-year comparison shows an increase in the representation of female undergraduates, from 22.7% to 25.4%, and roughly level representation (20%) at the graduate level. However, the enrollment of female geoscience students shows an erratic pattern during that 3-year period.

The geoscientific subdiscipline with the largest enrollment of women in 1987-88 is geology, followed by general earth science, geological engineering, geophysics, and oceanography/marine science. (The distribution for the total Canadian geoscience population was largest in geology, followed by general earth science, geological engineering, geophysics, and geophysical engineering.) (See Appendix I.)

The number of female BA/BS candidates is largest in geology, followed by general earth science, geological engineering, geophysics, and environmental science. The number of female MA/MS candidates is largest in geology, followed by equal numbers in oceanography/marine science, geological engineering and soil science; then geophysics, and geochemistry. The number of female PhD candidates is largest in geology, followed by oceanography/marine science, geophysics, geochemistry, and geophysical engineering.

Degrees — Women

The number of awards to female geoscience students decreased in 1987-88 (226, 21.0%) compared to 1986-87 (317, 25.8%). (See Fig. 19.)

A 2-year comparison shows a decrease in the representation of female degree recipients at all levels. In 1986-87, women received 26.4% (246) of the BA/BS degrees, 25.9% (60) of the MA/MS degrees, and 18.0% (11) of the PhD degrees. In 1987-88, women received 21.3% (165) of the BA/BS degrees, 23.4% (53) of the MA/MS degrees, and 10.7% (8) of the PhD degrees.

The geoscientific subdiscipline with the largest number of BA/BS degrees awarded to women in 1987-88 was geology, followed by geological engineering, and equal numbers in geophysics, environmental science, and general earth science. The largest number of MA/MS degrees awarded to women was in geology, followed by equal numbers in both oceanography/marine science and geological engineering, followed by geophysics. The largest number of PhD degrees awarded to women was in geology. (See Appendix I.)

Appendix Ia: U.S. Data (alphabetically by state)

ALABAMA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	34											2		36
J	28											4		32
S	38											7		45
MA/MS cand.	47													47
PhD cand.	9													9
TOTAL	**156**											**13**		**169**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	34											2		36
MA/MS	11													11
PhD														
TOTAL	**45**											**2**		**47**

Students with disabilities/handicaps = 1.

ALASKA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	3			2										5
J	5			3								1		9
S	15			1								8		24
MA/MS cand.	61	8		8					1					78
PhD cand.	7	7		1										15
TOTAL	**91**	**15**		**15**					**1**			**9**		**131**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	2			2								4		8
MA/MS	9													9
PhD	1	1												2
TOTAL	**12**	**1**		**2**								**4**		**19**

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

ARIZONA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	71	4		15			1	4			12	1	1	109
J	31	4		3				4			17	6	8	73
S	61	1		19				9			21	2		113
MA/MS cand.	30	0		11				5						46
PhD cand.	4	19		11		5		9						48
TOTAL	**197**	**28**		**59**		**5**	**1**	**31**			**50**	**9**	**9**	**389**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	12	1	11			1	2	12			1		1	41
MA/MS	26	4	5					3	1					39
PhD	4		4											
TOTAL	**42**	**5**	**20**			**1**	**2**	**15**	**1**		**1**		**1**	**80**

Students with disabilities/handicaps = 1.

ARKANSAS

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	23												17	40
J	20													20
S	11													11
MA/MS cand.	25	2												27
PhD cand.														
TOTAL	**79**	**2**											**17**	**98**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	10													10
MA/MS	5													5
PhD														
TOTAL	**15**													**15**

CALIFORNIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S*	371	20	562	4			4		4		5	9	432	1,411
J	250	14	16	2					2	2			63	349
S	356	19	11	8		1			11				126	532
MA/MS cand.	366	57	99	15		16	81		22	2	2		17	677
PhD cand.	212	149	146	4		42	16		24	1	4		41	639
TOTAL	**1,555**	**259**	**834**	**33**		**59**	**101**		**63**	**5**	**11**	**9**	**679**	**3,608**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	114	23	6	4		4			10	1			99	261
MA/MS	78	51	34	5		3	7		8	1	2		16	205
PhD	23	18	4			6	4		5				12	72
TOTAL	**215**	**92**	**44**	**9**		**13**	**11**		**23**	**2**	**2**		**127**	**538**

AA/AS (46): GEO = 26, OC/M = 20.

Students with disabilities/handicaps = 24.

* Note: A predominant portion of the F/S enrollment is at 2-year institutions.

COLORADO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	142	13		30			3				11	9	33	241
J	67	11		23			8				4	7	23	143
S	107	22		29			17				2	5	39	221
MA/MS cand.	159	62		29		15	33					2	10	310
PhD cand.	115	29		11		22	9							186
TOTAL	**590**	**137**		**122**		**37**	**70**				**17**	**23**	**105**	**1,101**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	65	27		34		9					3	4	25	167
MA/MS	39	19		8		5							2	73
PhD	11	6		1		2								20
TOTAL	**115**	**52**		**43**		**16**					**3**	**4**	**27**	**260**

CONNECTICUT

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	16										18	2	6	42
J	19		1								17	3		40
S	11	4	1				1				9	3	5	34
MA/MS cand.	11	4	16				6							37
PhD cand.	8	12	2			20			9					51
TOTAL	**65**	**20**	**20**			**20**	**7**		**9**		**44**	**8**	**11**	**204**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	3	1									4	5	9	22
MA/MS		4	3			5			1					13
PhD	1	1	1			1								4
TOTAL	**4**	**5**	**5**			**6**			**1**		**4**	**5**	**9**	**39**

Students with disabilities/handicaps = 1.

DELAWARE

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	17													17
J	13													13
S	12	2												14
MA/MS cand.	26													26
PhD cand.	12													12
TOTAL	**80**	**2**												**82**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	12	2												14
MA/MS	3													3
PhD	1													1
TOTAL	**16**	**2**												**18**

DISTRICT OF COLUMBIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	3		8				10			6	16			43
J	5		4							6	13			28
S	3									2	12			17
MA/MS cand.	13					6			1					20
PhD cand.	11					2								13
TOTAL	**35**		**12**			**8**	**10**		**1**	**14**	**41**			**121**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	1													1
MA/MS	8					3			1					12
PhD	1								1					2
TOTAL	**10**					**3**			**2**					**15**

AA/AS (20): OC/M = 7, HYD = 2, SOS = 2, ENV = 9.

FLORIDA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	61	1	104				2				5	3		176
J	65		9				1				2			77
S	48		3				5							56
MA/MS cand.	88	6	36			4	7	1	3		27			172
PhD cand.	2		33			1			3		6			45
TOTAL	**264**	**7**	**185**			**5**	**15**	**1**	**6**		**40**	**3**		**526**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	28		7				5							40
MA/MS	20		22								2			44
PhD	1		6											7
TOTAL	**49**		**35**				**5**				**2**			**91**

AA/AS (10): GEO = 8, OC/M = 2.

GEORGIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	18										1			19
J	25													25
S	28											1		29
MA/MS cand.	59	9	1	3		5	5				7			89
PhD cand.	24	8	2			5					29			68
TOTAL	**154**	**17**	**3**	**3**		**10**	**5**				**37**	**1**		**230**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	13													13
MA/MS	9	6					2				2			19
PhD	1	1												2
TOTAL	**23**	**7**					**2**				**2**			**34**

Students with disabilities/handicaps = 1.

HAWAII

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	9													9
J	10													10
S	15													15
MA/MS cand.	17	4	21				4							46
PhD cand.	25	5	36				3	4						73
TOTAL	**76**	**9**	**57**				**7**	**4**						**153**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	12													12
MA/MS	5	4	5				3							17
PhD	4	4	1											9
TOTAL	**21**	**8**	**6**				**3**							**38**

IDAHO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	43	1			15							6		65
J	22	2			5							7		36
S	35	6			20							7		68
MA/MS cand.	43	3			14		19					15		94
PhD cand.	14													14
TOTAL	157	12			54		19					35		277

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	25	3										4		32
MA/MS	15						2					2		19
PhD	3													3
TOTAL	43	3					2					6		54

ILLINOIS

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	96										8	9	12	125
J	73											3	10	86
S	99											17	21	137
MA/MS cand.	105	4				7	11	2	3				29	161
PhD cand.	73	4	1	1		6	6	10	16				14	131
TOTAL	446	8	1	1		13	17	12	19		8	29	86	640

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	59											1	11	71
MA/MS	32	1						1	1			3	2	40
PhD	6	1				2			2				7	18
TOTAL	97	2				2		1	3			4	20	129

INDIANA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	81	3							3			3	2	92
J	60	2							1			1		64
S	89	2		2									1	94
MA/MS cand.	45	22		10		17	14		7		6			121
PhD cand.	18	8		2		10	5		3		4			50
TOTAL	293	37		14		27	19		14		10	4	3	421

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	44	1		1										46
MA/MS	10	11				5			4					32
PhD	2					3			1		1			7
TOTAL	56	12		1		8			5		1			85

IOWA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	12										2	11		25
J	13										2	8	8	31
S	16										2	5	2	25
MA/MS cand.	14											3		17
PhD cand.	14													14
TOTAL	69										6	27	10	112

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	15										2	6	8	31
MA/MS	9											1		10
PhD	3													3
TOTAL	27										2	7	8	44

Students with disabilities/handicaps = 1.

KANSAS

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	3													3
J	6	3												9
S	8	10												18
MA/MS cand.	6													6
PhD cand.	20	11												31
TOTAL	**37**	**30**												**67**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	6	3												9
MA/MS	6													6
PhD														
TOTAL	**12**	**3**												**15**

KENTUCKY

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	48											7		55
J	32											3		35
S	69	4									1	5	4	83
MA/MS cand.	40	6					16	1	2			9		74
PhD cand.	11	1					5		1					18
TOTAL	**200**	**11**					**21**	**1**	**3**		**1**	**24**	**4**	**265**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	35	2										2	1	40
MA/MS	15	3												18
PhD	2													2
TOTAL	**52**	**5**										**2**	**1**	**60**

Students with disabilities/handicaps = 4.

LOUISIANA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	41	17										2		60
J	42	22										8		72
S	91	6										9		106
MA/MS cand.	162	22	24			3		2	2			6		221
PhD cand.	17	6	28			3		5	3					62
TOTAL	353	73	52			6		7	5			25		521

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	55											4		59
MA/MS	34	7	3						4			1		49
PhD	1	1	3					1						6
TOTAL	90	8	6					1	4			5		114

AA/AS (13): GEO = 13 (petroleum technology).

MAINE

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	49	2				1					2		3	57
J	35										2		2	39
S	27					1					1		4	33
MA/MS cand.	44		8											52
PhD cand.			4											4
TOTAL	155	2	12			2					5		9	185

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	15		1										1	17
MA/MS	3													3
PhD														
TOTAL	18		1										1	20

Students with disabilities/handicaps = 1.

MARYLAND

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	17		150											167
J	23		73									2	1	99
S	19		84											103
MA/MS cand.	21										6			27
PhD cand.	35	4	8			4	3		1		19			74
TOTAL	**115**	**4**	**315**			**4**	**3**		**1**		**25**	**2**	**1**	**470**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	10		82											92
MA/MS	3										6			9
PhD						1					6			7
TOTAL	**13**		**82**			**1**					**12**			**108**

MASSACHUSETTS

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	89		3								5		23	120
J	94										5		12	111
S	77										5		11	93
MA/MS cand.	73													73
PhD cand.	75													75
TOTAL	**408**		**3**								**15**		**46**	**472**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	58												12	70
MA/MS	12													12
PhD	2													2
TOTAL	**72**												**12**	**84**

Students with disabilities/handicaps = 1.

MICHIGAN

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	219	5	2	9							14	6	49	304
J	71	3	6	13							13	4	20	130
S	95	3	7	25							9	8	35	182
MA/MS cand.	97	6	6	13		8	6	4	8				14	162
PhD cand.	42	4	7	5		4	2	2	14				26	106
	524	21	28	65		12	8	6	22		36	18	144	884

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	63	8	2	30							14	5	9	131
MA/MS	19	3	2	9		2			1				7	43
PhD	9		1	1					1				5	17
TOTAL	91	11	5	40		2			2		14	5	21	191

Students with disabilities/handicaps = 3.

MINNESOTA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	77	2									2	6	10	97
J	89	1		3							1	9	2	105
S	100	19	1	16							12	3	1	152
MA/MS cand.	53	5		14					2					74
PhD cand.	33	8		19										60
TOTAL	354	35	1	52					2		15	18	13	488

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	77	8	1	15								6	4	111
MA/MS	14													14
PhD														
TOTAL	91	8	1	15								6	4	125

Students with disabilities/handicaps = 2.

AGI Geoscience Student Enrollment Survey

MISSISSIPPI

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	20			3										23
J	6			1										7
S	29													29
MA/MS cand.	28													28
PhD cand.	2													2
TOTAL	**85**			**4**										**89**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	12													12
MA/MS	7													7
PhD														
TOTAL	19													19

MISSOURI

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	44	5							2			13	2	66
J	19	2										6	7	34
S	22	3										11	8	44
MA/MS cand.	39	11				1							3	54
PhD cand.	23	18				6								47
TOTAL	**147**	**39**				**7**			**2**			**30**	**20**	**245**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	15	2										4	7	28
MA/MS	7	1				2								10
PhD	1	4												5
TOTAL	**23**	**7**				**2**						**4**	**7**	**43**

Students with disabilities/handicaps = 3.

MONTANA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	18	14		17								8	8	65
J	13	4		9									8	34
S	34	11		15									8	68
MA/MS cand.	57	7		3		7							5	79
PhD cand.	4													4
TOTAL	126	36		44		7						8	29	250

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	23			14									8	45
MA/MS	23													23
PhD														
TOTAL	46			14									8	68

NEBRASKA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	28													28
J	16													16
S	22													22
MA/MS cand.	39													39
PhD cand.	15													15
TOTAL	120													120

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	5													5
MA/MS														
PhD														
TOTAL	5													5

NEVADA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	10	2		9			2							23
J	6	2		6										14
S	23	9		25									2	59
MA/MS cand.	48	4		17		2	24							95
PhD cand.	17	3					3							23
TOTAL	104	20		57		2	29						2	214

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	9	1		6										16
MA/MS	12	2		3			6							23
PhD	1						1							2
TOTAL	22	3		9			7							41

NEW HAMPSHIRE

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	12	26										2		40
J	5	11										1		17
S	15	3												18
MA/MS cand.	4		3			1	15							23
PhD cand.	4		2											6
TOTAL	40	40	5			1	15					3		104

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	21						1							22
MA/MS	5		1				2							8
PhD	3													3
TOTAL	29		1				3							33

NEW JERSEY

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	64		62									3	42	171
J	32		26									2	13	73
S	36		26									3	10	75
MA/MS cand.	45						3							48
PhD cand.	54		4				10							68
TOTAL	**231**		**118**				**13**					**8**	**65**	**435**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	37		8	7									4	56
MA/MS	9													9
PhD	5		1											71
TOTAL	**51**		**9**	**7**									**4**	**71**

NEW MEXICO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	29	7	15	4							16	8		79
J	24	4	13	3							6	7		57
S	77	8	15	18		1					6	6		131
MA/MS cand.	101	18	2			7	38							166
PhD cand.	49	8				3	8							68
TOTAL	**280**	**45**	**45**	**25**		**11**	**46**				**28**	**21**		**501**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	26	8	8									2		44
MA/MS	22	2				3	6				6			39
PhD	4	2												6
TOTAL	**52**	**12**	**8**			**3**	**6**				**6**	**2**		**89**

Students with disabilities/handicaps = 2.

NEW YORK

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	238		5			3	9							255
J	179	1	6			3	8							197
S	238	1	3			4	10							256
MA/MS cand.	155	7	69	3		5	14	3	8	2				266
PhD cand.	158	21	65	3		15	1	3	20					286
TOTAL	**968**	**30**	**148**	**6**		**30**	**42**	**6**	**28**	**2**				**1,260**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	182		2			2					35	6	25	252
MA/MS	49	2	21			2	1	1	2		2			80
PhD	10	2	10			2			2					26
TOTAL	**241**	**4**	**33**			**6**	**1**	**1**	**4**		**37**	**6**	**25**	**358**

Students with disabilities/handicaps = 4.

NORTH CAROLINA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	48												14	62
J	36											3	21	60
S	61	1										2	14	78
MA/MS cand.	74	11	18			4								107
PhD cand.	19	10	11			1			2					43
TOTAL	**238**	**22**	**29**			**5**			**2**			**5**	**49**	**350**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	26												6	32
MA/MS	23	4	1			1		1	1				11	42
PhD	3													3
TOTAL	**52**	**4**	**1**			**1**		**1**	**1**				**17**	**77**

NORTH DAKOTA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	13			2								3	6	24
J	4			3								3	4	14
S	21			10								5	7	43
MA/MS cand.	30													30
PhD cand.	4													4
TOTAL	**72**			**15**								**11**	**17**	**115**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	11			2								1		14
MA/MS	5													5
PhD	1													1
TOTAL	**17**			**2**								**1**		**20**

OHIO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	156	2							2			7	4	171
J	110	3									5	6	3	127
S	227	3		1		1	5				14	4	3	258
MA/MS cand.	300	22					25					4	5	356
PhD cand.	56					2								58
TOTAL	**849**	**30**		**1**		**3**	**30**		**2**		**19**	**21**	**15**	**970**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	134	1									14	6	2	157
MA/MS	84	4					3						-2	93
PhD	8													8
TOTAL	**226**	**5**					**3**				**14**	**6**	**4**	**258**

Students with disabilities/handicaps = 1.

OKLAHOMA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	27	12		1										40
J	14	2										2		18
S	62	12		2								2		78
MA/MS cand.	92	16		2										110
PhD cand.	17	6												23
TOTAL	212	48		5								4		269

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	28	7		2										37
MA/MS	24	11												35
PhD		1												1
TOTAL	52	19		2										73

OREGON

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	50													50
J	23													23
S	41													41
MA/MS cand.	54	7	17											78
PhD cand.	30	3	17											50
TOTAL	198	10	34											242

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	20													20
MA/MS	23	1	4											28
PhD	6	1	5											12
TOTAL	49	2	9											60

Students with disabilities/handicaps = 1.

PENNSYLVANIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	132	1	34			2		16			23	44	39	291
J	129		7			1		2			18	38	53	248
S	122		16			3		4			20	35	74	274
MA/MS cand.	49	16				11	1		8			18	12	115
PhD cand.	44	16				22			5			2	6	95
	476	33	57			39	1	22	13		61	137	184	1,023

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	106		5								4	11	65	191
MA/MS	40	6				5						2	5	58
PhD	5					4								9
TOTAL	151	6	5			9					4	13	70	258

PUERTO RICO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	19													19
J	8													8
S	13													13
MA/MS cand.														
PhD cand.														
TOTAL	40													40

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	1													1
MA/MS														
PhD														
TOTAL	1													1

RHODE ISLAND

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	12		33											45
J	9		15											24
S	10		7											14
MA/MS cand.	22													22
PhD cand.														
TOTAL	**53**		**55**											**108**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	10													10
MA/MS	3													3
PhD														
TOTAL	**13**													**13**

SOUTH CAROLINA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	35		68											103
J	18		18									1		37
S	31		30											61
MA/MS cand.	54		12									20		86
PhD cand.	64		14									3		81
TOTAL	**202**		**142**									**24**		**368**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	47		17											64
MA/MS	12		2											14
PhD	10		2											12
TOTAL	**69**		**21**											**90**

Students with disabilities/handicaps = 2.

SOUTH DAKOTA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	9		4									1		14
J	6		7											13
S	4		20									2		26
MA/MS cand.	19		14						7					40
PhD cand.	11		3											14
TOTAL	49		48						7			3		107

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	4			18									1	23
MA/MS	5			4					3					12
PhD	2													2
TOTAL	11			22					3				1	37

TENNESSEE

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	36													36
J	25										6			31
S	37										10			47
MA/MS cand.	28													28
PhD cand.	28													28
TOTAL	154										16			170

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	17										15			32
MA/MS	5													5
PhD	3													3
TOTAL	25										15			40

TEXAS

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	616	62	14								4		16	712
J	194	10	3							19	4		10	240
S	300	35	9				1			9	3		8	365
MA/MS cand.	549	63	35	1			15				7			670
PhD cand.	200	34	52											286
TOTAL	**1859**	**204**	**113**	**1**			**16**			**28**	**18**		**34**	**2,273**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	324	56	4									25	11	420
MA/MS	183	39	12				4							238
PhD	22	23	6											51
TOTAL	**529**	**118**	**22**				**4**					**25**	**11**	**709**

AA/AS = 1.

Students with disabilities/handicaps = 6.

UTAH

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	60	4		3								12		79
J	24	1		1								4		30
S	72	7		13								15		107
MA/MS cand.	87	18										3		108
PhD cand.	18	10												28
TOTAL	**261**	**40**		**17**								**34**		**352**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	33	2		7										42
MA/MS	14	5												19
PhD	3	3												6
TOTAL	**50**	**10**		**7**										**67**

Students with disabilities/handicaps = 1.

VERMONT

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	22											1		23
J	14											1		15
S	17													17
MA/MS cand.	15													15
PhD cand.														
TOTAL	68											2		70

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	14													14
MA/MS	3											1		4
PhD														
TOTAL	17											1		18

Students with disabilities/handicaps = 1.

VIRGINIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	94	7	2								11	3		117
J	52	4									37		2	95
S	97	5									32		2	136
MA/MS cand.	56	6	42								40			144
PhD cand.	32	6	25								26			89
TOTAL	331	28	69								146	3	4	581

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	66	1	3								25		2	97
MA/MS	12	7	4								6			29
PhD	8	1									7			16
TOTAL	86	9	7								38		2	142

Students with disabilities/handicaps = 1.

WASHINGTON

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	49	1	53				1				6	10	4	124
J	66	2	39	3							9	5		124
S	95	2	36	18							16	16		183
MA/MS cand.	100	16	64	6			6		3		31			226
PhD cand.	44	27	31								1	6		109
TOTAL	354	48	223	27			7		3		63	37	4	766

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	57	1	23	5							6	6		98
MA/MS	11	3	10	2							11			37
PhD	1	5	4											10
TOTAL	69	9	37	7							17	6		145

Students with disabilities/handicaps = 1.

WEST VIRGINIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	31													31
J	14													14
S	27													27
MA/MS cand.	36													36
PhD cand.	10													10
TOTAL	118													118

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	14													14
MA/MS	7													7
PhD	2													2
TOTAL	23													23

WISCONSIN

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	37			5						6	27		3	78
J	53	6		1			3			2	13			78
S	88	29		2			2		1	3	17		2	144
MA/MS cand.	39	6	8	2	4	1	9	5	1	1				76
PhD cand.	27	16	10		4	1	1		1					60
	244	57	18	10	8	2	15	5	3	12	57		5	436

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	38	30							1	4	16		2	91
MA/MS	15	4	1		2		7	2						31
PhD	4	2	2											8
TOTAL	57	36	3		2		7	2	1	4	16		2	130

WYOMING

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	13	1												14
J	12													12
S	27	1												28
MA/MS cand.	36	13												49
PhD cand.	24	7												31
TOTAL	112	22												134

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	17													17
MA/MS	11	4												15
PhD	3	2												5
TOTAL	31	6												37

Canadian Data (alphabetically by province)

ALBERTA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	240	34						9	16					299
J	79	30												109
S	83	49									10			142
MA/MS cand.	72	25									18			115
PhD cand.	52	15							2		1			70
TOTAL	526	153						9	18		29			735

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	83	34												117
MA/MS	29	6									7			42
PhD	9	2												11
TOTAL	121	42									7			170

BRITISH COLUMBIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	47			7									300	354
J	53	16	10	43	4			15						141
S	46	16	10	20	6									98
MA/MS cand.	25	9	24	5										63
PhD cand.	10	16	19	3										48
TOTAL	181	57	63	78	10			15					300	704

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	31	19	6		8									64
MA/MS	5	9	8											22
PhD	2	1	7											10
TOTAL	38	29	21		8									96

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

AGI Geoscience Student Enrollment Survey

MANITOBA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	24	2		4									1	31
J	11	1		8									4	24
S	10	3		20									2	35
MA/MS cand.	8	3				4		2						17
PhD cand.	2	3						3						8
TOTAL	**55**	**12**		**32**		**4**		**5**					**7**	**115**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	13	3		12									2	30
MA/MS	3	1						1						5
PhD														
TOTAL	**16**	**4**		**12**				**1**					**2**	**35**

NEW BRUNSWICK

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	41				5									46
J	7				4									11
S	22	2			25									49
MA/MS cand.	11	1							1					13
PhD cand.	10					1			2					13
TOTAL	**91**	**3**			**34**	**1**			**3**					**132**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	10													10
MA/MS	2													2
PhD	1													1
TOTAL	**13**													**13**

NEWFOUNDLAND

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S													255	255
J													31	31
S													42	42
MA/MS cand.	41	3		3										47
PhD cand.	22	2		1										25
TOTAL	63	5		4									328	400

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	7												30	37
MA/MS	1													1
PhD	3													3
TOTAL	11												30	41

NOVA SCOTIA

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	102													102
J	35													35
S	32													32
MA/MS cand.	27	1	14			2			5					27
PhD cand.	6	4	40			1			3					54
TOTAL	149	5	54			3			8					219

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	38		3											41
MA/MS	11		4											15
PhD	1													1
TOTAL	50		7											57

ONTARIO

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	558	12		68	5					4	23		24	694
J	170	15		57	12	4				4	10		2	274
S	174	19		41	16	2		2	1	5	16		5	281
MA/MS cand.	215	33	4	13		14	3	6	3	32				323
PhD cand.	165	23		2		12	2	2	3	14			2	225
TOTAL	**1282**	**102**	**4**	**181**	**33**	**32**	**5**	**10**	**7**	**59**	**49**		**33**	**1,797**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	196	13		58	11	1		2	1	12	19		13	326
MA/MS	74	10	1	1		2	1	1		6				96
PhD	29	2	2						1	2				36
TOTAL	**299**	**25**	**3**	**59**	**11**	**3**	**1**	**3**	**2**	**20**	**19**		**13**	**458**

QUEBEC

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	55	2		24										81
J	58	3		60										121
S	90	3		19										112
MA/MS cand.	64	3	2	28	11	5	3				2			118
PhD cand.	40	3		14	3				1					61
TOTAL	**307**	**14**	**2**	**145**	**14**	**5**	**3**		**1**		**2**			**493**

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	76	3		34										113
MA/MS	17			19	3				1					40
PhD	3	1		4	1									9
TOTAL	**96**	**4**		**57**	**4**				**1**					**162**

AGI Geoscience Student Enrollment Survey

SASKATCHEWAN

1988 enrollment by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
F/S	43	4												47
J	33			7	9									49
S	40	7		7	5									59
MA/MS cand.	42	6		3	4									55
PhD cand.	13	2		3										18
TOTAL	171	19		20	18									228

1988 degrees by level

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	30	1		4	5									40
MA/MS	4													4
PhD	1													1
TOTAL	35	1		4	5									45

Appendix Ib

Enrollment of women by level and discipline, 1988 (U.S.)

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS cand.	2,709	135	632	84	11	6	23	5	6	17	271	312	539	4,750
MA/MS cand.	980	80	179	25	2	35	77	8	32	0	58	41	28	1,545
PhD cand.	384	76	134	6	1	48	16	13	35	0	19	4	16	752
TOTAL	4,073	291	945	115	14	89	116	26	73	17	348	357	583	7,047

Degrees awarded to women by level and discipline, 1988 (U.S.)

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	481	58	32	32	0	1	3	0	4	1	50	38	74	774
MA/MS	246	41	47	4	1	6	13	1	13	0	16	4	13	405
PhD	40	8	6	0	0	3	1	0	4	0	4	0	4	70
TOTAL	767	107	85	36	1	10	17	1	21	1	70	42	91	1,249

Enrollment of women by level and discipline, 1988 (Canada)

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS cand.	542	30	10	80	12	3		6	6	5	21		187	901
MA/MS cand.	117	9	12	10	4	8	3	4	2	10	1			180
PhD cand.	55	7	12		2	6	1	1	1	1	1			87
TOTAL	714	46	34	90	18	17	4	11	9	16	22		187	1,168

Degrees awarded to women by level and discipline, 1988 (Canada)

	GEO	GPH	OC/M	GEG	GPE	GCH	HYD	MNL	PAL	SOS	ENV	EST	ESG	Total
BA/BS	103	10	2	17	9			1		3	10		10	165
MA/MS	42	2	3	3					1	1			1	53
PhD	5	1	1					1						8
TOTAL	150	13	6	20	9			2	1	4	10		11	226

Geoscientific subdisciplines are abbreviated as follows: GEO = geology, GPH = geophysics, OC/M = oceanography/marine science, GEG = geological engineering, GPE = geophysical engineering, GCH = geochemistry, HYD = hydrology, MNL = mineralogy, PAL = paleontology, SOS = soil science, ENV = environmental science, EST = earth-science teaching, ESG = general earth science.

Appendix Ic

ARIZONA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		1	1		2
J		2			2
S		2			2
MA/MS cand.					
PhD cand.					
Total		5	1		6

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		2	1		3
MA/MS					
PhD					
Total		2	1		3

ALABAMA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1		15		16
J			7		7
S	1		7		8
MA/MS cand.					
PhD cand.					
Total	2		29		31

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS			12		12
MA/MS					
PhD					
Total			12		12

ALASKA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S	1				1
MA/MS cand.			1	4	5
PhD cand.				2	2
Total	1		1	6	8

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS					
PhD					
Total	1				1

ARKANSAS: None Reported

COLORADO

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	2	4		3	9
J	3	3	1	1	8
S	3	5		3	11
MA/MS cand.		5		5	10
PhD cand.		4		9	13
Total	**8**	**21**	**1**	**21**	**51**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1	2	1	3	7
MA/MS		1		1	2
PhD					
Total	**1**	**3**	**1**	**4**	**9**

CONNECTICUT

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J	1				1
S	1				1
MA/MS cand.				4	4
PhD cand.					
Total	**2**			**4**	**6**

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

CALIFORNIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S*	67	769	16	153	1,005
J	6	22	8	16	52
S	12	21	25	20	78
MA/MS cand.	8	8	18	25	59
PhD cand.	6	18	33	29	86
Total	**99**	**838**	**100**	**243**	**1,280**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		2	10	5	17
MA/MS			8	6	14
PhD	1	3	11	4	19
Total	**1**	**5**	**29**	**15**	**50**

* Note: A predominant portion of the F/S enrollment is at 2-year institutions.

DELAWARE

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S					
MA/MS cand.				1	1
PhD cand.				3	3
Total				4	4

1988 degree awards to ethnic minorities

None reported

DISTRICT OF COLUMBIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	11				11
J	18				18
S	10				10
MA/MS cand.					
PhD cand.					
Total	39				39

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS					
PhD					
Total	1				1

FLORIDA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	2	9			11
J	1	1			2
S	1	3		1	5
MA/MS cand.	4	5			9
PhD cand.		1		3	4
Total	8	19		4	31

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1		6		7
MA/MS					
PhD					
Total	1		6		7

GEORGIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S					
MA/MS cand.	1	2			3
PhD cand.	2	3		1	6
Total	3	5		1	9

1988 degree awards to ethnic minorities

None reported

HAWAII

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S				2	2
J					
S			1	1	2
MA/MS cand.				3	3
PhD cand.		3		7	10
Total		3	1	13	17

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS				2	2
PhD					
Total				2	2

IDAHO

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S			1		1
J			1		1
S			2	2	4
MA/MS cand.	1	1	1	1	4
PhD cand.	1	1	4	2	8
Total	2	2	9	5	18

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS	1				1
PhD	1				1
Total	2	1			3

ILLINOIS

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	3	1	9		13
J	1				1
S	1			1	2
MA/MS cand.	1			5	6
PhD cand.		1		4	5
Total	6	2	9	10	27

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	2				2
MA/MS				1	1
PhD					
Total	2			1	3

INDIANA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	2	1			3
J					
S					
MA/MS cand	2	1		10	13.
PhD cand.		1		12	13
Total	4	3		22	29

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS	1	1		1	3
PhD					
Total	1	1		3	5

IOWA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S				1	1
J					
S					
MA/MS cand.	1				1
PhD cand.					
Total	1			1	2

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

KANSAS

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S					
MA/MS cand.	1				1
PhD cand.					
Total	**1**				**1**

1988 degree awards to ethnic minorities

None reported

KENTUCKY

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S			4		4
J			1		1
S	1	1		1	3
MA/MS cand.			1		1
PhD cand.	1				1
Total	**2**	**2**	**5**	**1**	**10**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		1			1
MA/MS		1			1
PhD					
Total		**1**			**2**

LOUISIANA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		5	3		8
J	6		2		8
S	7	1	1		9
MA/MS cand.	7	4		1	12
PhD cand.	1	1			2
Total	**26**	**9**	**3**	**1**	**39**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	2		1		3
MA/MS	2	1			3
PhD					
Total	**4**	**1**	**1**		**6**

MARYLAND

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1				1
J				1	1
S					
MA/MS cand.					
PhD cand.	3			4	7
Total	4			5	9

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS					
PhD	1			1	2
Total	1			1	2

MASSACHUSETTS

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	4	2		1	7
J	3	1		5	9
S	1				1
MA/MS cand.		2		1	3
PhD cand.		2			2
Total	8	7		7	22

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS		2			2
PhD					
Total	1	2			3

MICHIGAN

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	2	1		1	4
J		1			1
S	1				1
MA/MS cand.	1			1	2
PhD cand.		4	1		5
Total	4	6	1	2	13

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total

None reported

MINNESOTA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J	1		1	1	3
S	1				1
MA/MS cand.				1	1
PhD cand.				7	7
Total	**2**		**1**	**9**	**12**

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

MISSISSIPPI

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J	1				1
S					
MA/MS cand.	1				1
PhD cand.					
Total	**2**				**2**

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

MISSOURI

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1	1			2
J				1	1
S					
MA/MS cand.					
PhD cand.				1	1
Total	**1**	**1**		**2**	**4**

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

MONTANA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S			1		1
J					
S			1		1
MA/MS cand.				3	3
PhD cand.					
Total			2	3	5

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS			1		1
MA/MS					
PhD					
Total			1		1

NEBRASKA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S					
MA/MS cand.				3	3
PhD cand.				4	4
Total				7	7

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS					
PhD				2	2
Total				2	2

NEVADA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J		1			1
S		1	1		2
MA/MS cand.					
PhD cand.					
Total		2	1		3

1988 degree awards to ethnic minorities

None reported

NEW HAMPSHIRE

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		2			2
J					
S				1	1
MA/MS cand.					
PhD cand.					
Total		2		1	3

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS				1	1
MA/MS					
PhD					
Total				1	1

NEW JERSEY

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	13	6			19
J	3	1		1	5
S	3	2			5
MA/MS cand.	4				4
PhD cand.	8			1	9
Total	31	9		2	42

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS	4				4
PhD	1			1	2
Total	6			1	7

NEW MEXICO

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		4	1		5
J	1	2			3
S	1	10	1		12
MA/MS cand.		6		1	7
PhD cand.		1			1
Total	2	23	2	1	28

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		3			3
MA/MS		1			1
PhD					
Total		4			4

NEW YORK

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1	2			3
J	4	2		3	9
S	9	5		6	20
MA/MS cand.		4		1	5
PhD cand.	2	4	1	7	14
Total	**16**	**17**	**1**	**17**	**51**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	2	2			4
MA/MS		1		2	3
PhD					
Total	**2**	**3**		**2**	**7**

NORTH CAROLINA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	6				6
J	3				3
S					
MA/MS cand.	5			1	6
PhD cand.	5			3	8
Total	**19**			**4**	**23**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1				1
MA/MS	1				1
PhD					
Total	**2**				**2**

NORTH DAKOTA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S			1		1
J					
S					
MA/MS cand.					
PhD cand.					
Total			**1**		**1**

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

OHIO

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1				1
J	1				1
S				1	1
MA/MS cand.	1			1	2
PhD cand.		1		3	4
Total	3	1		5	9

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS				1	1
MA/MS					
PhD					
Total				1	1

OKLAHOMA = None Reported
(2 Native American students completed GEO minor).

OREGON

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S				1	1
J		1		1	2
S			1	2	3
MA/MS cand.				2	2
PhD cand.		1		1	2
Total		2	1	7	10

1988 degree awards to ethnic minorities

None reported

PENNSYLVANIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	4	1		2	7
J					
S		2		2	4
MA/MS cand.	2				2
PhD cand.	1		1		2
Total	7	3	1	4	15

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		1		1	2
MA/MS		1			1
PhD					
Total		2		1	3

PUERTO RICO

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		19			19
J		8			8
S		13			13
MA/MS cand.					
PhD cand.					
Total		40			40

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS		1			1
MA/MS					
PhD					
Total		1			1

RHODE ISLAND

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S		2			2
J					
S					
MA/MS cand.					
PhD cand.					
Total		2			2

1988 degree awards to ethnic minorities

None reported

SOUTH CAROLINA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	6				6
J					
S					
MA/MS cand.		5		7	12
PhD cand.				11	11
Total	6	5		18	29

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS					
PhD				2	2
Total				2	2

SOUTH DAKOTA: None Reported

TENNESSEE

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S					
MA/MS cand.	2			1	3
PhD cand.					
Total	**2**			**1**	**3**

1988 degree awards to ethnic minorities

None reported

TEXAS

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	34	31		3	68
J	1	11			12
S	4	32	1	8	45
MA/MS cand.	2	8		13	23
PhD cand.				10	10
Total	**41**	**82**	**1**	**34**	**158**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	3	9		5	17
MA/MS	3	3	1	4	11
PhD				2	2
Total	**6**	**12**	**1**	**11**	**30**

UTAH

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1				1
J	1	1			2
S	3				3
MA/MS cand.					
PhD cand.					
Total	**5**	**1**			**6**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	2				2
MA/MS					
PhD					
Total	**2**				**2**

VERMONT: None reported.

VIRGINIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	8				8
J	7				7
S	2			1	3
MA/MS cand.	7	3		7	17
PhD cand.		3	1	5	9
Total	**24**	**6**	**1**	**13**	**44**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS					
MA/MS					
PhD				3	3
Total				**3**	**3**

WASHINGTON

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	2	1		2	5
J	1			3	4
S	3			9	12
MA/MS cand.	2	2		1	5
PhD cand.	1			1	2
Total	**9**	**3**		**16**	**28**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1	1		5	7
MA/MS		1		2	3
PhD					
Total	**1**	**2**		**7**	**10**

WEST VIRGINIA

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S				1	1
MA/MS cand.					
PhD cand.				3	3
Total				**4**	**4**

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
			None reported		

WISCONSIN

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S	1				1
J					
S	2	1			3
MA/MS cand.	1				1
PhD cand.		1		2	3
Total	4	2		2	8

1988 degree awards to ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
BA/BS	1		1		2
MA/MS	1				1
PhD					
Total	2		1		3

WYOMING

1988 enrollment of ethnic minorities

	Black	Hispanic	Native American	Asian American	Total
F/S					
J					
S	1				1
MA/MS cand.					
PhD cand.					
Total	1				1

1988 degree awards to ethnic minorities

Black	Hispanic	Native American	Asian American	Total
		None reported		

Appendix II

Directory of Schools Offering AA/AS Degrees, 1987-88

This list of institutions that offer Associate of Arts or Associate of Science degrees (geology or geotechnology) is provided to improve access to higher education. This information may be helpful to individuals who want to begin their post-secondary education at a local institution, or for those "... students who came from the lower quartile of their high school graduating class and [/or] from the lower socioeconomic segments of society ..." to have entry into higher education (American Association of Community and Junior Colleges).

United States (N = 69)

(alphabetically by state)

Alaska:	University of Alaska-Anchorage
Arizona:	Arizona Western College Glendale Community College Phoenix College
California:	Cerritos College Chaffey College Citrus College City College of San Francisco Crafton Hills College College of the Desert East Los Angeles College El Camino College Foothill College Fullerton College Glendale Community College Grossmont College Los Angeles City College Marin Community College Mt. San Antonio Community College Ohlone College Rio Hondo College Sacramento City College Saddleback Community College San Bernardino Valley College San Jose City College Santa Barbara City College College of the Sequoias
Colorado:	Mesa College
District of Columbia:	University of the District of Columbia

Directory of Schools Offering AA/AS Degrees, 1987-88 (cont'd.)

Florida:	Gulf Coast Community College Miami-Dade Community College St. Petersburg Junior College
Georgia:	Gainesville Junior College
Idaho:	Lewis-Clark State College Ricks College
Illinois:	College of Lake County Oakton Community College
Indiana:	Indiana University-Northwest
Kentucky:	University of Louisville
Maine:	University of Maine-Farmington
Michigan:	St. Clair County Community College
Montana:	Montana College of Mineral Science & Technology
New Jersey:	Union County College
New York:	Adirondack Community College Jefferson Community College Monroe Community College Nassau Community College Orange County Community College Suffolk County Community College Ulster County Community College
Ohio:	Kent State-Stark
Oklahoma:	Northeastern State University
Oregon:	Clatsop Community College
Pennsylvania:	Montgomery County Community College West Chester University
Rhode Island:	Community College of Rhode Island
Texas:	Del Mar College Houston Community College System North Harris County College Odessa College San Antonio College
Utah:	Snow College Weber State College
Vermont:	Castleton State College

Directory of Schools Offering AA/AS Degrees, 1987-88 (cont'd.)

Washington:	Grays Harbor College Green River Community College University of Washington
West Virginia:	Potomac State College
Wisconsin:	University of Wisconsin-Green Bay

Canada (N = 2)

(alphabetically by province)

Alberta:	Mount Royal College
British Columbia:	Douglas College

Source: Claudy, N. (ed.), 1988. *Directory of Geoscience Departments* (27th ed.). American Geological Institute (Alexandria, Va.).

Appendix III

Directory of Minority (Geo)science Organizations

The following organizations may be beneficial to those individuals who wish to identify qualified female and/or ethnic minority geoscientists.

American Geological Institute: AGI sponsors the Minority Participation Program that provides scholarships to geoscience students who are U.S. citizens and members of ethnic groups considered underrepresented in geoscience: Black, Hispanic, and Native American. This program has operated continuously since 1974. A database on the AGI-MPP participants has been established allowing AGI to provide limited assistance regarding searches for or information on minority geoscientists.

AGI, 4220 King Street, Alexandria, VA, 22302-1507. Telephone: 703/379-2480 or 800/336-4764. FAX: 703/379-7563.

American Indian Science & Engineering Society: AISES aims to provide American Indian youth with the opportunity to enter the world of science and engineering. AISES has a periodical publication (quarterly), Winds of Change, that promotes opportunities for minority scientists. (e.g., positions available, etc.).

AISES, 1310 College Avenue, Suite 1220, Boulder, CO, 80302. Telephone: 303/492-8658.

Association for Women Geoscientists: AWG aims to enhance the quality and level of participation of women in the geosciences. Programs address education, professional and technical growth, and networking. AWG has a bi-monthly publication, Gaea, that offers classified advertising.

AWG, 10200 W. 44th Avenue, Suite 304, Wheat Ridge, CO, 80033-2840. Telephone: 303/422-8527. FAX: 303/422-8894.

League of United Latin American Citizens: LULAC has a network of Educational Service Centers that help to ensure that Hispanics receive the training that will enable their maximal contribution to American society. LULAC's programs for Hispanic youth include educational counseling, scholarsips, employment and career awareness, and advocacy.

LULAC-NESC, 400 First Street NW, Suite 716, Washington, DC, 20001. Telephone: 202/347-1652

National Association of Black Geologists and Geophysicists, *P.O. Box 720157, Houston, TX, 77272.*

Native American Science Education Association, *Federal Building, 114 N. San Francisco, Flagstaff, AZ, 86001.*

American Geological Institute

4220 King Street

Alexandria, VA 22302-1507

(703) 379-2480

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